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SMOKE CONTROL

HEARINGS

BEFORE

THE SUBCOMMITTEE ON PUBLIC HEALTH
HOSPITALS, AND CHARITIES
COMMITTEE ON THE DISTRICT OF COLUMBIA
HOUSE OF REPRESENTATIVES
SEVENTY-FOURTH CONGRESS

FIRST SESSION

ON

H. R. 6232 and H. R. 7204



UNITED STATES
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SMOKE CONTROL

FRIDAY, APRIL 5, 1935

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE OF PUBLIC HEALTH, HOSPITALS, AND
CHARITIES OF THE COMMITTEE ON THE DISTRICT OF COLUMBIA,
Washington, D. C.

The subcommittee met at 10:30 a. m., Hon. Virginia E. Jenckes (chairman), presiding.

Mrs. JENCKES. The committee will come to order. This is a preliminary hearing on H. R. 6232, a bill to prevent the fouling of the atmosphere in the District of Columbia by smoke and other foreign substances, and for other purposes, and H. R. 7204, a bill to control and regulate the discharge or emission of smoke, soot, noxious gases, cinders, or fly ash into open air in the District of Columbia, and to provide for the inspection, control, and regulation of steam boilers and unfired pressure vessels in the District of Columbia.

(The bills referred to are as follows:)

[H. R. 7204, 74th Cong., 1st sess.]

A BILL To control and regulate the discharge or emission of smoke, soot, noxious gases, cinders, or fly ash into open air in the District of Columbia, and to provide for the inspection, control, and regulation of steam boilers and unfired pressure vessels in the District of Columbia

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Smoke and Boiler Inspection Act of the District of Columbia."

SEC. 2. Wherever the word "person" is used in this Act it shall include individuals, firms, partnerships, associations, and corporations. Wherever the word "stack" is used it shall mean any chimney, smokestack, structure, or opening of any kind whatsoever capable of emitting smoke. Smokestacks on locomotive roundhouses shall be deemed parts of locomotives beneath them.

SEC. 3. There is hereby constituted a Division of Smoke Regulation and Boiler Inspection in the Engineer Department of the District of Columbia, to be composed of the following: (a) A boiler and smoke inspector who shall be an engineer qualified by training and experience in the theory and practice of the construction and operation of steam boilers and of fuel-burning furnaces, and in the theory and practice of smoke regulation and prevention, and who, under the supervision of the Commissioners of the District of Columbia, shall have charge of the enforcement of the provisions of this Act and of the regulations promulgated hereunder: (b) such engineers as may be necessary, qualified by training and experience in the theory and practice of combustion engineering and smoke regulation: (c) such assistant boiler and smoke inspectors as may be necessary, qualified by training and experience in the construction and operation of steam boilers or fuel-burning furnaces and the regulation of smoke from the same: (d) and such other employees as may be necessary for the proper performance of the work. All such officials and employees shall be appointed by the Commissioners of the District of Columbia and their compensation shall be fixed in accordance with the Classification Act of 1923, as amended.

SEC. 4. There is hereby constituted an Advisory Board, which shall consist of five members to be appointed by the Commissioners of the District of

Columbia for terms of three years each, which Board shall act as advisors to the Boiler and Smoke Inspector on engineering policies and regulations. The members of said Board shall be citizens of the United States and residents of the District of Columbia for a period of not less than three years immediately prior to their appointment, and shall be engineers of recognized ability, integrity, and capacity for associated service in municipal work and who have no financial interest in the manufacture or sale of any combustion- or smoke-abatement device, or any fuel. At least two members of said Board shall be mechanical engineers with broad experience in the design and operation of heating and fuel-burning installations. When acting as such advisers, members of the Board shall serve without compensation. Three members of such Board shall constitute a quorum for the transaction of business. Vacancies on said Board shall be filled by appointment by the Commissioners of the District of Columbia.

SEC. 5. The Advisory Board shall act as a board of appeals to hear and determine appeals from decisions of the Boiler and Smoke Inspector, in respect to permits provided by section 7 of this Act. When acting as such board of appeals each member shall receive compensation of \$5 for each day or part thereof so serving, but no member shall receive a sum in excess of \$250 per annum.

SEC. 6. The production or emission of smoke, fly ash, or fumes, the shade of which is equal to or greater than number 3 of the Ringelman Smoke Chart, as standardized by the United States Bureau of Mines, or which is so dense as to prevent seeing through it at the point of emission into the external air, from any stack, or open fire in the District of Columbia, except for such periods of time as may be determined by the Commissioners of the District of Columbia, is hereby prohibited.

SEC. 7. No person shall construct, install, reconstruct, alter, or repair any furnace, boiler furnace, including steam boilers, stack or other apparatus connected with stack, unless said person shall have obtained a permit from the Boiler and Smoke Inspector; *Provided, however*, That minor or emergency repairs which do not increase the capacity of such furnace or do not involve any alteration in or addition to such furnace, boiler furnace, including steam boilers, stack or other apparatus connected with stack, and which do not involve any alteration in the method of smoke prevention, may be made without a permit.

SEC. 8. No person shall use or cause to be used any new, remodeled, or reconstructed furnace, boiler furnace, including steam boilers, stack or other apparatus connected with stack, unless said person shall have a certificate of use, obtained from the Boiler and Smoke Inspector, showing that the construction or reconstruction is in compliance with the provisions of this Act and the regulations promulgated hereunder.

SEC. 9. No person shall use or cause to be used any steam boiler operating at a pressure in excess of fifteen pounds per square inch or any unfired pressure vessel, except domestic hot-water vessels and such other vessels as may be exempted by the Commissioners of the District of Columbia, operating at a pressure in excess of sixty pounds per square inch and having a capacity in excess of fifteen gallons, without having first obtained a certificate of inspection from the Boiler and Smoke Inspector.

SEC. 10. No person shall operate or cause to be operated any boiler or unfired pressure vessel, referred to in section 9 hereof, at a pressure greater than that permitted by the certificate of inspection, or while feed pumps, gauges, cocks, valves, or automatic safety-control devices are not in proper working condition, or in violation of any of the regulations promulgated hereunder by the Commissioners of the District of Columbia.

SEC. 11. The Boiler and Smoke Inspector, or one of his inspectors, shall inspect all furnaces, boilers, stacks, and apparatus for which applications are made for certificates as required by section 8 of this Act, and, if such be found to be in compliance with the requirements of this Act and the regulations promulgated hereunder, shall issue such certificates. The Boiler and Smoke Inspector, or one of his assistants, shall inspect annually all boilers and unfired pressure vessels for which a certificate of inspection is required by section 9 of this Act, and shall determine by actual tests the condition thereof from the standpoint of safety and fitness for operation. If such boiler or vessel be safe and fit for operation, the Boiler and Smoke Inspector shall issue the certificate of inspection which shall state, among other things, the pressure per square inch such boiler or vessel may be allowed to carry. This cer-

tificate of inspection shall be displayed in a conspicuous place in close proximity to the boiler or vessel covered thereby.

In the case of a boiler or unfired pressure vessel which is regularly inspected at least once a year by an insurance company authorized to insure in the District of Columbia against loss from explosion, and found to be in a safe and insurable condition, and where a report of such inspection is filed within thirty days after such inspection with the Boiler and Smoke Inspector, such inspection and report may take the place of the inspection hereinbefore provided, and the certificate of inspection may be issued upon such report.

SEC. 12. The Boiler and Smoke Inspector may, in his discretion, revoke or suspend the certificate of use, provided in section 8 of this Act, or the certificate of inspection provided in section 9 hereof, if at any time he shall find any boiler or unfired pressure vessel covered by such certificate to be unsafe or unfit for operation.

SEC. 13. The issuance by the Boiler and Smoke Inspector of any permit for the construction, installation, reconstruction, alteration, or repair of any furnace, boiler furnace, including steam boilers, stack, or other apparatus connected with stack, shall not be held or construed to exempt any person to whom such permit may have been issued from prosecution for violation of provisions of this Act relating to the emission of smoke in excess of that permitted.

SEC. 14. Steam boilers and unfired pressure vessels located in or upon self-propelled boats or vessels or boats or vessels owned or operated by the United States, or upon locomotives, street cars, busses, or other vehicles operated under the regulations of any Federal agency or the Public Utilities Commission of the District of Columbia, shall be exempt from the provisions of sections 7, 8, and 9 of this Act.

SEC. 15. There shall be paid to the Collector of Taxes of the District of Columbia for the examination of an application for a permit or for the issuance of a permit or a certificate as required by this Act, fees to be fixed from time to time by the Commissioners of the District of Columbia, for each unit of fuel-burning apparatus, and for the annual inspection of each steam boiler or unfired pressure vessel, commensurate with the cost of examination or inspection, with power to fix higher fees for the issuance of a certificate where the inspection in connection therewith is made on a Sunday or legal holiday. When an inspection report is filed by an insurance company with the said Boiler and Smoke Inspector, showing that a boiler or unfired pressure vessel has been inspected and found to be in a safe and insurable condition, as provided in section 11, there shall be paid to the Collector of Taxes of the District of Columbia a fee of \$1 prior to the issuance of a certificate of inspection.

SEC. 16. In the event that a permit, provided in section 7 of this Act, is denied by the Boiler and Smoke Inspector, the applicant shall have the right to appeal to the Advisory Board, and such appeal shall be accompanied by a certified check payable to, or receipt of deposit with, the Collector of Taxes of the District of Columbia in the amount of \$25 to guarantee the payment of the fees of the Advisory Board. If the decision of the Inspector be reversed by the Advisory Board, such deposit shall be returned to the depositor thereof; if it be affirmed such deposit shall be treated as payment to the District of Columbia of the costs of the appeal. The decisions of the Advisory Board upon such appeals shall be final.

SEC. 17. The Boiler and Smoke Inspector, his engineers, and inspectors shall have the right to enter, in the performance of his or their duties, at all reasonable hours, all premises from which smoke is being emitted or has been emitted, or on which a steam boiler or unfired pressure vessel is being installed, operated, or maintained, and it shall be unlawful for any person to deny admittance to any such inspector or engineer or to interfere with him or them in the performance of his or their duties.

SEC. 18. The Boiler and Smoke Inspector shall keep in the Office of the Division of Smoke Regulation and Boiler Inspection all applications made, and a complete record thereof, as well as of all permits and certificates issued. He shall also keep a complete record of each boiler and unfired pressure vessel inspected, a record of all smoke observations on stacks, and such other records and data pertaining to the Division of Smoke Regulation and Boiler Inspection as may be directed by the Commissioners of the District of Columbia.

SEC. 19. The use of any furnace, boiler furnace, stack or other apparatus connected with stack, hereafter constructed, installed, reconstructed, or altered in violation of any of the prohibitions or requirements of this Act or of the

regulations promulgated under the authority hereof, shall constitute a common nuisance and the Corporation Counsel of the District of Columbia may maintain an action in the Supreme Court of the District of Columbia, in the name of the District of Columbia, to abate and perpetually enjoin such nuisance.

SEC. 20. If any person shall violate any one or more of the provisions of this Act, or of regulations duly promulgated hereunder, the Corporation Counsel of the District of Columbia, or any of his assistants, shall file an information in the police court in the name of the District of Columbia, and upon conviction such person shall be subject to a fine not to exceed \$100 or to imprisonment for not more than ninety days, or both, for each and every violation thereof and each violation shall constitute a separate offense.

SEC. 21. The Commissioners of the District of Columbia are hereby authorized and empowered to make such regulations as they may deem proper to carry out the provisions of this Act, and to fix the fees herein provided.

SEC. 22. All laws or parts of laws relating to smoke abatement or regulation or boiler inspection in conflict with the provisions of this Act are hereby repealed.

SEC. 23. If any provision of this Act or the application thereof to any person or circumstances is held invalid, such invalidity shall not affect other provisions or applications of the Act which can be given effect without the invalid provision or application, and to this end the provisions of this Act are declared to be severable.

SEC. 24. This Act shall become effective six months from the date of its approval. The regulations and schedule of fees herein provided for shall be promulgated by the Commissioners of the District of Columbia and printed in one or more of the daily newspapers published in the said District but shall not be enforced until thirty days after such publication or until the effective date of this Act. Amendments to the regulations or new or additional schedules of fees, when and as the same may be adopted, shall likewise be printed in one or more of the daily newspapers published in the said District and no penalty for violation thereof or payment of new or additional fees prescribed shall be enforced until thirty days after such publication.

[H. R. 6232, 74th Cong., 1st sess.]

A BILL To prevent the fouling of the atmosphere in the District of Columbia by smoke and other foreign substances, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the emission of unnecessary smoke, noxious gases, cinders, or dust into the atmosphere within the District of Columbia is hereby declared to be unlawful and a menace to public health and safety.

SEC. 2. The Commissioners of the District of Columbia are hereby authorized and directed to make and promulgate reasonable regulations for the installation and operation of combustion and all other devices susceptible of use in such manner as to violate the purposes of this Act and the said Commissioners may from time to time alter, amend, or rescind such regulations and promulgate such amended or additional regulations as they may in their discretion deem necessary.

SEC. 3. Enforcement of this Act shall be upon information by the corporation counsel in the police court of the District of Columbia. Any person convicted of violating this Act or any regulation of the Commissioners made hereunder shall be punished by a fine not to exceed \$500 for each and every such offense.

SEC. 4. The Commissioners of the District of Columbia shall be responsible for the enforcement of this Act and may direct any officer or employee of the government of the District of Columbia to perform such service as inspector or otherwise in connection with such enforcement as they may deem necessary.

SEC. 5. All provisions of the Act approved February 2, 1899 (30 Stat. 812 ch. 79, sec. 5), which are inconsistent with this Act are hereby repealed.

Mrs. JENCKES. The House meets at 12 o'clock today and it is necessary that the members of the committee go on the floor at that time. I am going to ask those who want to make preliminary statements this morning, or those who may desire to make complete statements,

to make them as briefly as possible. Then those who have technical statements or facts to give to us, other than in reference to the inconvenience and discomfort we suffer from the smoke nuisance in our lovely capital, may prepare their papers and give them to us at a time that we shall arrange for an adjourned hearing.

Mr. Quinn, who is a member of this subcommittee to which these bills were referred, is here, and some of the other members of the subcommittee will be here in a little while.

I am going to ask Mrs. Pitney to make a brief statement, because it is due largely to Mrs. Pitney and her untiring efforts that the attention of the District has been particularly called to the thing to which we have grown so accustomed, that is the smoke belching forth from improperly stoked furnaces.

Will you give your full name and address?

STATEMENT OF MRS. MAHLON PITNEY

Mrs. PITNEY. Mrs. Mahlon Pitney, 1736 R Street NW.

Madam Chairman, I think I might say that I am here to represent the 2,500 people who signed the petition presented to your committee on February 20 of this year, asking Congress to rid the city of smoke and ash.

It is very gratifying to me that you have bill H. R. 6232, and the bill drawn by the Commissioners before you at this hearing. We shall probably find flaws in both bills, but that is our privilege and what we are here for.

Since I appeared before your committee on February 20, I have given considerable time inquiring into the economic losses due to unnecessary smoke and dirt in the air, and with the assistance of Dr. R. R. Sayres and Dr. J. E. Ives, of the Public Health Service, and Mr. Hood, of the Bureau of Mines, I have before me some statistics that may be of interest to you.

The pollution of the air in Washington is not as bad as in some other American cities, but the United States Public Health Service found during the year 1932 to 1933 that as much as 296 tons of smoke and dust were deposited, per square mile per year in Washington at 7th and B Streets SW, of which 154 tons were carbon and 142 tons were ash.

The total damage directly chargeable to smoke is so staggering that only the general uniformity of the various estimates makes them at all believable.

The figures usually quoted to cover the annual bill for smoke in the United States lies in the neighborhood of \$500,000,000, of which \$140,000,000 is said to represent the cost of spoiled merchandise, and building cleaning.

A smoky atmosphere also means loss of daylight and increased lighting bills.

Besides these losses which affect our pocketbooks directly, the literature on this subject discusses the injury of smoke to plants, shrubs, and trees in our streets and in our parks.

In 1928 the city of New York voted the sum of \$871,420 for the rehabilitation of Central Park solely because smoke had destroyed the trees and shrubs.

Dr. Arnold H. Kegel, Chicago's former commissioner of health, asserts that the largest uncontrolled menace to that city's health was smoke.

Public health comes first and the air must be made fit to live and breathe in.

We have spent millions to collect the liquid sewage of each building, to convey it under the streets where it does not contaminate the soil, and discharge it at filtration plants, or into the drainage canal where it will do no harm, and where it cannot contaminate our food or water supply.

We have spent practically nothing to collect or prevent the discharge of sewage from our forest of chimneys into the air we live in and breathe.

We speak of civic pride. Then we permit a heavy layer of soot to tarnish and deface our finest buildings.

The Bureau of Standards has reported that all the limestone and marble buildings and monuments in the District of Columbia, including the famed Washington Monument, are showing signs of disintegration from acids in soot-laden air.

Dr. H. B. Meller, of the Mellon Institute, expected to address your committee if the hearing had been held some time next week, but due to the advanced date of the hearing he was unable to be with us today. He has promised to be present at a later hearing.

We have had agitation against smoke nuisance in the District ever since 1918, and now we ask that you do everything that is possible to make Washington the cleanest and most beautiful city in the world.

Mrs. JENCKES. I think the first person to come into my office and ask permission to speak on this bill this morning was Mr. Koepler, from Bluefield, Va., and we would be glad to have a statement from him at this time.

Will you give your full name and state whom you represent?

STATEMENT OF W. E. E. KOEPLER, SECRETARY, POCAHONTAS OPERATORS' ASSOCIATION, AND FIRST VICE PRESIDENT SMOKE PREVENTION ASSOCIATION, INC., BLUEFIELD, W. VA.

Mr. KOEPLER. Madam Chairman, I heard of this bill which you are considering this morning only yesterday, so I have not had time to prepare any extensive statement.

My name is W. E. E. Koepler; I am secretary of the Pocahontas Operators' Association, and also have another interest in this matter, being the first vice president of the Smoke Prevention Association of the United States.

We have, of course, served various parts of the United States with this coal which is a low volatile coal, sometimes called smokeless coal because of the low volatile content of the coal. So we have a dual interest in the matter, or at least I have acquired a dual capacity by reason of having done that service.

I think I would prefer to file a brief with you in order to save your time.

I am here in Washington periodically in reference to the regulation of the coal industry. I believe in the principle that if the coal industry

offend generally, by committing a smoke nuisance, that there should be some form of regulation, but we should not be put in a straight-jacket as to whatever we do. Therefore, I have been here off and on every time there has been a coal regulatory bill proposed. But I have not had the time to prepare anything to present to you today in the form of a statement or a brief, and would like to devote as much time as possible to it. And there are a great many other coal people who would like to be here and get the benefit of the point of view of the public. I know the point of view of the coal dealers of this town, and I know that they want to try to conform as nearly as possible to the point of view of the public and give them the best service they can in adapting our coals to the conditions under which the people operate.

We would like to suggest to you that there be another hearing on these bills in 10 days, so that these other people I have referred to can be here, too.

Mrs. JENCKES. I think it is the intention of the committee to get a general picture of the situation this morning and then to have an adjourned meeting at a time we will decide upon today, in order that we can gather all the information we can get, and then all the people who will want to testify will be known to us and we will be known to you.

I think Mr. Koepler has drawn a picture that is very necessary for every one to get, and that is the necessity for the cooperation of all people in connection with the same interest.

It is up to the coal people to help the consumers, and it is up to each one of us to consider the smoke and dirt that comes from our chimneys and affects our neighbors. After looking out of our windows and seeing the effect of the smoke, then we can determine that we are going to make Washington the spotless town of the United States.

We have here this morning a representative of Dr. Ruhland, the new health officer of the District, and we will be glad to have him make a few remarks at this time in reference to this matter.

Mr. Butts, we will be glad to have a statement from you, representing Dr. Ruhland.

STATEMENT OF J. FRANK BUTTS, CHIEF SANITARY INSPECTOR HEALTH DEPARTMENT

Mr. BUTTS. Madam Chairman, Dr. Ruhland asked me to convey to you his regrets at not being able to be here, because of a previous very pressing engagement. He asked me to come down and represent him and the health department and be ready to give you any information you might wish with respect to it.

As to the pros and cons of the proposed bills, I do not feel that it is my duty in my capacity here this morning to make any remarks along that line.

Mrs. JENCKES. You can give us something as to the number of calls which come to the health department complaining of the smoke nuisance, and complaining about the smoke that comes from the chimneys.

Mr. BUTTS. I can.

Mrs. JENCKES. They are very frequent, are they not?

Mr. BUTTS. We have quite a number.

Mrs. JENCKES. What do you do when you get them?

Mr. BUTTS. They are investigated at once.

Mrs. JENCKES. What do you do when you investigate them?

Mr. BUTTS. We endeavor to contact the complaint and find out just what the complaint refers to. I think I can safely say, without fear of contradiction, that in probably 95 percent of the complaints we find that they are not well founded.

Mr. JENCKES. In other words, you are standing here telling us that this legislation is not necessary?

Mr. BUTTS. No; I am not.

Mr. JENCKES. You say it is not necessary?

Mr. BUTTS. No; I am not telling you that.

Mrs. JENCKES. But you say the complaints are not well founded.

Mr. BUTTS. Inasmuch as our law specifically states what constitutes a violation of it.

Mrs. JENCKES. Perhaps the law is at fault.

Mr. BUTTS. Yes, ma'am.

Mrs. JENCKES. We need regulatory provisions, something to take care of that matter, do we not?

Mr. BUTTS. I am of the opinion that the law should be properly amended, so that we should have no need for a new law. And I want to say that I think Dr. Ruhland would say the same thing if he were here.

He told me to inform you that he would be very willing to be relieved of the enforcement of the smoke law.

Mrs. JENCKES. We thank you very much for your statement.

Mr. QUINN. How long have you been connected with the health department?

Mr. BUTTS. Since the 1st of May 1899.

Mr. QUINN. Can you give me, off hand, the death rate in Washington in comparison with that of Philadelphia, Boston, Cincinnati, and Pittsburgh?

Mr. BUTTS. I could not.

Mr. QUINN. Can you get that for us and have it at our next meeting?

Mr. BUTTS. I can get that for you the next meeting. I have nothing to do with vital statistics, but I can get that information for you.

Mr. QUINN. Is it a fact that the death rate here is the highest in the United States?

Mr. BUTTS. I do not know; I have nothing to do with vital statistics. I am chief of the Bureau of Sanitation.

Mr. QUINN. I wish you would get that information in reference to Cincinnati, Pittsburgh, Philadelphia, Boston, New York, and Washington.

Mr. BUTTS. I will be very glad to do that.

Mrs. JENCKES. We have with us this morning Mr. Rufus Lusk, who desires to make a statement in reference to these bills, and we will be very glad to hear him at this time.

**STATEMENT OF RUFUS S. LUSK, SECRETARY, BUILDING OWNERS
& MANAGERS ASSOCIATION OF THE DISTRICT OF COLUMBIA**

Mr. Lusk. Madam Chairman, in speaking this morning I am speaking only for the apartment division of our association, which is the only one that has considered this legislation. We have two divisions, the apartment division and the office-building division, and the latter has not had an opportunity to pass upon this matter.

We are opposed to the so-called "Roberts bill." I am speaking for the apartment division of our association now in saying that we favor H. R. 7204 as regards the smoke regulations and the inspection of boilers. The only part we have objected to, and I wish to make this clear, that it was not unanimous, is section 7, which refers to the necessity for obtaining a permit in the event that there is the installation of a boiler, or if there is any marked change in the heating apparatus.

Some of the members—and I wish to make this quite clear—felt that there should be a provision for the issuance of permits the same as in the case of plumbing and other things in connection with a home, or a building, if it was a new structure, but that the necessity for obtaining a permit should not be retroactive and applied to old structures.

I shall later get for you, Madam Chairman, the reaction of the office-building division of our association.

Mrs. JENCKES. You will have that for us at our adjourned hearing?

Mr. LUSK. I shall.

Mr. QUINN. Do you not think it is proper and necessary to get a permit for remodeling and repairing?

Mr. LUSK. Personally, I think if it is a radical change, if it is a new installation of something that would affect the smoke, perhaps it might be desirable, but for minor repairs, I doubt it.

Mrs. JENCKES. We thank you for your statement, Mr. Lusk.

We will now have a statement by Mr. Green, who represents the engineers employed in the public schools.

**STATEMENT OF W. I. GREEN, REPRESENTING ENGINEERS
EMPLOYED IN THE PUBLIC SCHOOLS OF THE DISTRICT OF
COLUMBIA**

Mr. GREEN. Madam Chairman, I am here representing the engineers employed in the public schools of the District of Columbia.

I merely wish to make a preliminary statement to the effect that the engineers employed in the public schools of the District are opposed to this bill in its present form because of certain provisions that, in effect, revise the present regulations. Later on we will be glad to submit a brief.

Mrs. JENCKES. Do you represent just the engineers in the public schools of the District of Columbia?

Mr. GREEN. Yes.

Mrs. JENCKES. You do not represent the engineers in the private or parochial schools?

Mr. GREEN. No. I am accompanied this morning by a representative of the engineers in the private schools.

Mr. QUINN. What kind of coal do you use?

Mr. GREEN. Bituminous coal.

Mr. QUINN. Have you any trouble with smoke or dirt around your schools?

Mr. GREEN. Very little.

Mr. QUINN. Do you have smoke-consuming apparatus?

Mr. GREEN. No.

Mr. QUINN. Your general type of furnace is the under-draft furnace?

Mr. GREEN. We have some under-draft and some down-draft boilers. The buildings that have been built within the past 4 or 5 years are equipped with modern appliances that practically eliminate the smoke.

Mr. QUINN. Do you use fuel oil in any of your school buildings?

Mr. GREEN. No, sir.

Mrs. JENCKES. We will now be glad to have a statement from Mr. Kuehle, who, I understand, represents the engineers in private and parochial schools.

Will you state your full name and whom you represent?

STATEMENT OF C. F. KUEHLE, REPRESENTING ENGINEERS IN PRIVATE AND PAROCHIAL SCHOOLS

Mr. KUEHLE. My name is C. F. Kuehle; I am representing engineers in private schools and parochial schools.

My statement will be very brief.

We did not know about this bill in time to have our committee consider it before this hearing. We are not opposed to the bill as a smoke regulation bill, but we are opposed to some parts of it giving the Commissioners the power to change some of the regulations, which probably would affect our license law. We will have a brief ready to submit to the committee at the next hearing.

Mr. QUINN. Who do you represent here?

Mr. KUEHLE. The International Union of Operating Engineers.

Mr. QUINN. In the District?

Mr. KUEHLE. Yes.

Mr. QUINN. How long have you been here?

Mr. KUEHLE. Thirty-four years.

Mr. QUINN. What has been your experience in the use of soft coal?

Mr. KUEHLE. I believe if it is properly handled under proper mechanical devices it can be made almost smokeless.

Mr. QUINN. In contrast with fuel oil, as to creating soot and dirt.

Mr. KUEHLE. I have seen oil burners under boilers make more smoke than coal boilers, and more soot, if not properly handled.

Mr. QUINN. What is the fuel in major use here: hard coal, soft coal, or fuel oil?

Mr. KUEHLE. I believe the major fuel handled in the District is soft coal.

Mr. QUINN. As a resident of the District, what is your experience in connection with the tremendous number of automobiles here and the effect on the atmosphere caused by the way in which they are permitted to run, with bad combustion?

Mr. KUEHLE. Bad combustion would be injurious to health.

Mr. QUINN. Do you not think it is injurious if there is bad combustion?

Mr. KUEHLE. Yes, sir.

Mrs. JENCKES. We will now hear Mr. Joseph L. Gammell.

STATEMENT OF JOSEPH L. GAMMELL

Mr. GAMMELL. Honorable Chairman and members of this committee, I represent not an organization, but I am appearing here as a citizen and taxpayer of the District. To make the case plain to you, I am also the Southern representative of the Thatcher Co., manufacturers of heating apparatus, so you will know that there is a personal interest in what I have to say.

I am opposed to the first bill as it has been presented. To my mind, it is entirely vacuous.

That is rather a strong statement, in view of the fact that I have such a high regard for the author of the bill, who has a knowledge of and is familiar with more details than any man I have ever seen.

That bill places in the hands of the Commissioners the power to regulate and to say just what shall be done.

In the face of the protests of 38,000 people in the Federation of Citizens' Associations they declared that 52 miles of streets should be vacated at certain hours. They also put in effect regulations providing that no cast-iron tank heaters shall be used in the District of Columbia. That shut out many sales of a great many manufacturers who were forced to change their tank heaters in the District.

I appeared before a gathering of citizens last night and spoke about these bills and asked those people to come here. There was not one person in the audience who knew anything about this bill, and yet they were all astonished when they found that there was a possibility of their being fined a hundred dollars or put in jail for a certain period of time for violation of a smoke-nuisance law.

I think, Madam Chairman, that the enactment of this bill would place an undue hardship upon 40 or 50 percent of the residents of the District who would be obliged to pay from 50 to 60 percent more for their fuel than they have been paying. A great many people have gone to the use of soft coal as a fuel, and it might be that the Commissioners might put into effect regulations providing for the use of coke or hard coal. I have a copy of the 1935 regulations in Hudson County, N. J., which provide that only coke or hard coal may be used in house heating apparatus.

But over and beyond the fuel bill which residents of the District would be obliged to pay, would be this: suppose they were to put into effect regulations providing that the Potomac Electric Power Co. should be obliged to turn over the fuel-consuming apparatus from soft to hard coal. That would double the cost of producing electricity and place that much more of a burden upon the citizens of the District.

These are facts that we wanted to get before you to show you why we are opposed to this bill because we do not believe you want to place that added burden of fuel expense upon the citizens of the District.

I was president of the Lincoln Park Citizens' Association at one time and have had the interest of those people at heart for many years and have now. There are probably a hundred thousand people living in the southeast section of Washington, and not many of them can use oil burners or gas. It does not seem to me that you should impose hardships upon the citizens of the District, and I am speaking especially for the citizens who live in the southeast part of the city.

I also have in mind a similar hearing before a Senate committee 2 or 3 years ago, when Congressman Fish testified. Senator Davis said, "I would to God that more smoke came out of the smokestacks of the manufacturing industry of Pittsburgh at this particular time", and that bill was killed. I do not think you want to place this burden on the citizens of the District.

Mr. QUINN. Aside from being a salesman of furnaces, you are also interested in the city of Washington, I presume.

Mr. GAMMELL. I have lived here since the time of the World War, and have been identified with the Federation of Citizens' Associations, and have always worked in the interests of the citizens of Washington.

Mr. QUINN. You are opposed to the Commissioners handling this proposition?

Mr. GAMMELL. Absolutely.

Mr. QUINN. How do you think it could be handled in the most efficient manner?

Mr. GAMMELL. I think what we ought to do is not to impose a burden upon the people now by enacting regulations that would cause a great expense. My idea would be to set up an advisory board so we would have men to send out to teach the people how to regulate their furnaces and heating apparatus in such a way that the smoke will be properly consumed. There is a proper way of firing, and if you instruct people to fire the boiler so that the live coals will be placed next to the chimney stack and put in the green coal so that the gas from the green coal passes over the live coals, the smoke will be consumed and you will have few complaints about smoke.

Mr. QUINN. I am from Pittsburgh, and in relation to what you have said about Pittsburgh I wish to say that in Pittsburgh we wish we had more smoke. Unfortunately, we are down to number 5 in the list of smoke towns. It so happens that Cincinnati leads the cities of the Nation in that respect, although we have the title.

There are two ways of firing a furnace, and in most cases soft coal is just as efficient as hard coal or coke, and not so prohibitive in cost. But the trouble is that so many people do not know how to fire soft coal.

Mr. GAMMELL. Absolutely.

Mr. QUINN. Do you not think there ought to be some regulation to teach people how to use coal?

Mr. GAMMELL. Yes.

Mr. QUINN. We all want to give you a clean city here.

I have heard some reference made to dirty buildings. My observation is that the fact that some buildings are turning black is due to the iron deposits on the limestone. The dirt on the Washington Monument, in my judgment, was caused by iron deposits on the

stone and not caused by smoke. And the same thing is true in connection with many of the buildings.

Do you not think we ought to have regulations? This entire committee wants to give you a clean city, and to help your condition. Just because I am from Puttsburgh I am not going to fight for the use of soft coal, if it is injurious to your city.

But I happen to know that it can be regulated scientifically, and it is an economical fuel. So far as the people of the District are concerned, I do not want to impose any burden on them, and have them compelled to buy fuel oil, which is prohibitive in price in many communities.

Mr. GAMMELL. These regulations were put into effect in Hudson County, N. J., and they have done considerable good.

Mr. QUINN. I know that.

Mr. GAMMELL. My suggestion was that an advisory board be established to teach people how to fire.

Mr. QUINN. But will an advisory board function?

Mr. GAMMELL. It will if you pay them; they will function if you pay them.

Mrs. JENCKES. Do you not think that of all the towns in the world, Washington is perhaps better equipped to put forth this information as to the proper stoking of furnaces than any other town?

You have here civic organizations such as no other city in the United States has. Your civic organizations are your clearing house; you have no vote here, but your civic organizations and civic associations step in. They express your wishes.

You also have ailable here, and have the advantage of having the Bureau of Mines and the Bureau of Standards. Both of these organizations are well equipped to show the average citizen how to feed or stoke a furnace. If the citizens' associations are interested in economy, in the saving of money in the running of their homes, they know that this smoke and this dirt they complain of, and upon which Mrs. Pitney spoke, represents so much wasted money. It represents not only a waste due to the necessity of cleaning, and the money we have to pay to dry cleaners, but also in connection with the wear and tear and the replacing of things that have to be washed out frequently. But it also actually represents a waste of fuel in the heating units. With the information given through your civic associations to the owners of individual homes and to the owners of apartment houses and big office buildings, if they would use the information, we can bring about that white city that I was talking about a while ago.

Mr. GAMMELL. That is an admirable suggestion, Madam Chairman, and I think that would follow along the line of the advisory board to which I have already referred.

If that were put into effect, there are some thirty or forty thousand home owners in the civic organizations, and that would be an admirable means of conveying this information to them.

The Bureau of Mines has more information about that than anybody else. As to the Bureau of Standards, to which you referred, the Bureau of Standards is not properly equipped to take care of the boiler situation. I went to the Bureau of Standards to have certain tests made in connection with boilers, but I found that they are not now equipped to do that work. Why do you not give them

\$20,000 to set up this equipment? If you will give them \$20,000, I think you will be doing a wonderful thing.

Mrs. JENCKES. Mr. Battle, representing the coal association, desires to make a statement.

Mr. Battle, will you give your full name and state your position and whom you represent?

**STATEMENT OF JOHN D. BATTLE, EXECUTIVE SECRETARY
NATIONAL COAL ASSOCIATION, WASHINGTON, D. C.**

Mr. BATTLE. My name is John D. Battle; I am executive secretary of the National Coal Association, representing producers throughout the United States.

This is merely a preliminary statement, Madam Chairman. Unfortunately, we were not able to notify the coal people of this hearing in time for them to be here, and because of that fact, because they could not get here on such short notice, I am very glad to know that you are going to have an adjourned hearing, because they do want to be heard and to cooperate. There is not any disposition, I think, on the part of the coal industry to object to reasonable regulations.

As Mr. Quinn has said, bituminous coal must perform its proper function, and will do so if it is used properly.

I will not attempt to discuss the details of this measure because there are people in Pennsylvania, Maryland, and West Virginia who send hundreds of thousands of tons of coal here who have a vital interest in it. I am anxious that they be permitted to come here at the time of your adjourned hearing and tell their story. And I do hope you will give us ample notice.

Mrs. JENCKES. We will announce the date of the adjourned hearing before we leave this morning.

Mr. BATTLE. They will be here.

Mrs. JENCKES. We will now hear Mrs. Worrell, the president of the Columbia Heights Citizens' Association, one of the associations I have heard a lot from; and I think she is going to talk to us about this matter from the viewpoint of the householder who has to attend to having clean curtains, and also from the standpoint of the Government employees.

**STATEMENT OF MARGARET HOPKINS WORRELL, PRESIDENT
COLUMBIA HEIGHTS CITIZENS' ASSOCIATION**

Mrs. WORRELL. Madam Chairman, as president of the Columbia Heights Citizens' Association, I want to introduce into the record here and read a resolution that we passed unanimously on February 5, 1935, at a regular meeting of the Columbia Heights Citizens Association. We have from 67,000 to 70,000 residents in our territory, and quite a few apartment houses. This resolution says:

Whereas prior to the World War, residents of the District of Columbia were not permitted to burn soft coal;

Whereas the Columbia Heights Citizens' Association has passed numerous resolutions and continuously urged the District Commissioners to take action against the smoke nuisance which has grown to such proportions that our city looks like a little Pittsburgh; and

Whereas our Government has spent and will continue to spend millions of dollars on Federal buildings which all too soon will be ruined with grime and smoke from low-grade oil burners and soft coal; and

Whereas thousands of dollars must necessarily be spent from time to time to cleanse said buildings; and

Whereas the health of our citizens is also endangered through breathing this smoke-laden air; and

Whereas enforcement of the smoke law under existing regulations has proved a dire failure: Now, therefore, be it

Resolved, That the Columbia Heights Citizens' Association once more go on record as unalterably opposed to the burning of soft coal and low-grade oil in the District of Columbia; and be it further

Resolved, That we sponsor a bill to obtain a municipally owned hydroelectric plant which will supply current at an estimated cost of about 6 mills per kilowatt-hour to heat and light the Capital of our Nation and give the citizens a beautifully clean city; and be it further

Resolved, That a copy of this resolution be transmitted to the President of the United States, the chairman of the Senate and House District Committees, the District Commissioners, and the press.

Introduced by request of the president, February 5, 1935.

Passed unanimously with applause.

W. I. SWANTON, *Secretary*.

I live in Clifton Terrace, Madam Chairman, right there near the Central High School. My apartment is on the top floor, and I look over the whole city of Washington from my windows. You can look out of those windows and the smoke is so dense that you can hardly see the Capitol. If you do not believe me I ask anybody to come up to my apartment and look out my window. You will see the smoke belching from the apartment houses all over the city, black and yellow smoke.

We have complained about it and have even gone to the Senate Committee on the District of Columbia and asked Senator King if he could not do something about it.

The Commissioners said they did not have enough inspectors, but Senator King said they had plenty of inspectors, but we do not think so.

We want a clean city. Our houses and the curtains in our windows are blackened by this smoke. You can hardly wash the curtains and get them clean on account of the grease that is lodged in them due to the smoke.

A lady met me on the street this morning and asked me if I was coming over here to this hearing. I said, "yes", and she said, "please say for me that I cannot open my windows; I must keep them closed because of the smoke that comes from the apartment houses."

MR. QUINN. What is the name of the heights where you live?

MRS. WORRELL. Columbia Heights.

MR. QUINN. That is the highest point in Washington?

MRS. WORRELL. Almost; I would not say it is the highest point.

MR. QUINN. All good things come from the heights, from Calvary, from Mount Sinai and from Thomas Jefferson's home.

Here from the heights of Washington comes a resolution like you had read, concerning something that the people who passed the resolution knew nothing about. The yellow smoke comes from the wood that they were burning, I suppose, and you think it is Pittsburgh smoke.

Mrs. WORRELL. No, I do not; because I investigated that myself and I found coming from one of the apartments in the street 1 block south and just below where I live that they were burning refuse, and that yellow smoke was caused by that. That was the yellow smoke. But there is a great volume of black smoke pouring out from chimneys all over the city, much more than the yellow smoke.

Mr. QUINN. They burn their refuse in their furnaces?

Mrs. WORRELL. That one was doing it.

Mr. QUINN. Pardon me, but why do you refer to Pittsburgh?

Mrs. WORRELL. Years ago, I presume the person who wrote this resolution remembered, as I remember, when my son lived in Pittsburgh, on the heights there, and I visited him; of course, it was a good many years ago, probably 20 years ago, but at that time there was nothing but smoke hanging over the lower part of the city and it was perfectly terrible.

Mr. QUINN. Unfortunately, that is not true now, but I wish it were.

Mr. WORRELL. In all probability it is not now as bad as it was then.

Mr. QUINN. You and I are going to be good friends. You said you want a clean city. Did you appear before the crime committee?

Mrs. WORRELL. No; I did not appear before the crime committee, but there were plenty of people who did voice the same thing that I would have voiced had I appeared before that committee.

Mr. QUINN. Does your association take a keen interest in that phase of your civic life?

Mrs. WORRELL. We certainly do; we take a keen interest in everything civic.

Mr. QUINN. Did you pass as strong a resolution about that as you did when you passed this resolution in which you referred to Pittsburgh?

Mrs. WORRELL. I think there was probably some very strong resolution brought in about crime. I did not bring it down because I did not think I was going to be quizzed in this hearing on crime.

Mrs. JENCKES. All of the active civic organizations whose representatives have been in our office have been hopeful and taken an intelligent interest in the District, and Mrs. Worrell has been among the leaders in those forces.

Mr. QUINN. You and I are going to get along all right.

Mrs. WORRELL. Certainly we are.

Mr. QUINN. But I do not want you to slam any other city in order to help correct conditions in this city.

Mrs. WORRELL. I presume the person who brought in that resolution wanted to have——

Mr. QUINN. Something to say and did not know what he or she was talking about.

Mrs. WORRELL. Not at all; I cannot agree with you; probably when they were in Pittsburgh it was a terribly smoky city.

Mr. QUINN. You told me, I believe, that you were burning refuse.

Mrs. WORRELL. No; I only told you about one place, in the block just below me, where a great volume of yellow smoke was coming out, and I did find that they were burning some refuse that day that I investigated.

MR. NICHOLS. I do not take it that the gentleman from Pennsylvania [Mr. Quinn] is going to try to tell us that Pittsburgh is not about as dirty a town as you can find.

MRS. JENCKES. He likes Pittsburgh.

MRS. WORRELL. I like Pittsburgh; it is much cleaner than it used to be.

MR. NICHOLS. The factories are all shut down.

MR. QUINN. We have a second Alexander Hamilton there; that is our trouble.

MRS. JENCKES. Mr. Roberts, the people's counsel, is here, and we will be very glad to have a statement from him at this time.

STATEMENT OF WILLIAM A. ROBERTS, PEOPLE'S COUNSEL, PUBLIC UTILITIES COMMISSION

MR. ROBERTS. Madam Chairman and gentlemen of the committee, I had the pleasure of drawing one of these bills. I did not draw it because I wanted something to do, or because it was my prime function, but because I had an enormous number of people coming to my office asking that some definite steps be taken to get action. That included a number of very serious-minded people who were not inclined to draw resolutions, but they wanted to have some source of authority to which they could go and get action on their complaints.

I tried to prepare a bill which would meet our peculiar situation in Washington. And I want to say that there was no intention of drawing a bill which would prohibit the use of soft coal or any other fuel, or drawing a bill which would specify a particular kind of apparatus for the use of gas or oil or any particular kind of oil burner. I personally was not in the least interested in any group trying to sell something.

I reached the conclusion that the people of Washington, since they had had no regulation in regard to fuel consumption, were ready to back a bill which would provide that inspectors could go into their homes and define the kind of apparatus they should use and back specific suggestions for any number of effective measures. That is what we are trying to do, so as to prohibit unnecessary smoke, not to require a definite apparatus, but let them use whatever apparatus that they feel will enable them to obey the law and reach reasonably clean conditions so far as the production of smoke is concerned.

The original bill, the one in which I am particularly interested, is H. R. 6232. Since that time, when that particular bill was introduced on February 27, 1935, by Mrs. Norton, on the following day I was advised that there was another bill in course of preparation by some committee, and I immediately stated to Mrs. Norton and to Senator King that there was no intention of trying to force action on any bill, and that everybody should be given full opportunity to get in whatever bill they could.

I understand that day before yesterday the Commissioners approved the recommendations of their committee and transmitted to Mrs. Norton a bill which she introduced, and which is known as "H. R. 7204", which has now been printed and was made available in printed form only yesterday.

I had the advantage of seeing the advanced typewritten copy of that bill, and I have, for the use of the committee, prepared an analysis of that bill, and also of H. R. 6232, very definitely stating in the memorandum to the committee that I am not at all concerned that the bill that is passed shall be any bill I have written or that any other particular person has written. I just want a good, sound, workable bill that is effective.

In this memorandum I have pointed out that the type of regulation in H. R. 7204, which is the most recent bill, the so-called "Commissioners' bill", as far as smoke is concerned, is by the use of a standard smoke screen. Section 6 of that bill provides that—

The production or emission of smoke, fly ash, or fumes, the shade of which is equal to or greater than no. 3 of the Ringelman smoke chart, as standardized by the United States Bureau of Mines, or which is so dense as to prevent seeing through it at the point of emission into the external air, from any stack, or open fire in the District of Columbia, except for such periods of time as may be determined by the Commissioners of the District of Columbia, is hereby prohibited.

That appears in section 6, and that is the only provision in H. R. 7204 that deals particularly with smoke, except the title. Section 2 defines as a stack anything that can emit smoke, with a qualification to take care of roundhouses, and in the enforcement clause in section 20. All the rest of the bill deals with boiler inspection. Of course, boiler inspection will indirectly have considerable effect on smoke regulation and control.

I have pointed out in my memorandum certain technical defects which I am sure can be cured in that boiler-inspection provision. I am personally very much in favor of an improvement in our boiler-inspection law also. But I do think it will be of interest to the committee to require all the information you can get about the advisability of fixing by act of Congress the Ringelman screen no. 3 as a test for every class of combustion chamber in the District of Columbia in regard to smoke.

There you have a certain very definite standard, and a good one, and as soon as it becomes operative everybody in the District of Columbia will be subject to imprisonment or fine, or both, if they depart from that particular fixed standard.

MR. NICHOLS. What is this screen you refer to?

MR. ROBERTS. It is a color chart which establishes certain definite colors upon the emission of smoke.

As was pointed out by Captain Clark, assistant engineer commissioner, yesterday, it is possible to evade the standard set by that screen by the use of steam injected into the smoke column, and certainly somebody can develop something containing fumes that can pass through the chimney in such a way that it will not be detected by the Ringelman screen at all, such as yellow smoke coming from trash.

So if you put the Ringelman screen in use as a specific standard in the entire District, it means that the man who is using soft coal in his home in this town will be obliged within a short time to conform to the standard that you are fixing for a commercial consumer of fuel. I do not think it can be done effectively, and therefore it seems to me that with that provision in force, the consumer will not be regulated for a considerable period of time, and when the regulation becomes effective unreasonable harshness will result.

I think the proper way to attack the smoke problem is to give the District Commissioners technical advisers and to give them the right to make reasonable regulations and arrange for the prevention of unnecessary smoke, and then gradually, year after year, as enforcement and education may bring about improvement, they could tighten the enforcement provision and establish legal, constitutional classifications as between commercial use and domestic use, and approach a standard which we ultimately desire to have.

MR. NICHOLS. Is there any precedent in any of the cities of the East, or in any States in the United States, for the enactment of this sort of a law?

MR. ROBERTS. Not by Congress, of course.

MR. NICHOLS. I know that, of course.

MR. ROBERTS. By municipal ordinance: there are many cities that have that sort of an ordinance.

One of the most progressive of the smoke-regulatory systems is that of the city of Pittsburgh, which has devoted very large amounts of money and a great deal of study to the smoke problem, and they have there the finest system, not only for domestic consumers but for commercial consumers, intended to effect economies as well as purify the atmosphere.

MR. NICHOLS. Through the enforcement of those regulations, do they feel they are going to regulate this smoke condition?

MR. ROBERTS. Absolutely. The degree of improvement is tremendous.

A very valuable book has been published within the last year or so, which is entitled "Stop That Smoke", by Henry Obermeyer. It contains very valuable and correct information, and I recommend it to you for a quick study of the smoke problem.

He says that better education is the first thing, but that to get better education you have to have trained men, and you have to pay them to conduct an educational campaign. You also have to take care of the antisocial individual who will not look out for his neighbors, and have regulations which can be enforced. He also points out the great improvement in smoke control, and how it can be taken care of.

I have pointed out in my memorandum a number of technical defects which I think are in the boiler law, among which are these:

Our present boiler-inspection law is enforced by a boiler inspector who is a fee official. He has certain standards, but they are not adequate. He does not have an adequate force, and he is not sufficiently under the control of the District Commissioners.

Here, the first purpose of the bill is undoubtedly to move the control from where it is and put it under the District Commissioners, and in order to avoid direct control in the District Commissioners, it seems to me, the bill sets up an advisory board of five members. One rather humorous feature of that section is that it provides that the five members shall have no financial interest in the manufacture or sale of any combustion or smoke-abatement device or any fuel.

Then later it provides that two of the members shall be mechanical engineers, skilled, experienced, and trained in the drafting of designs for such apparatus. How mechanical engineers who are living in the District can support themselves without an interest in any kind

of fuel device is a mystery to me. I think the board could be made up of very excellent men with the civic interest at heart.

I have no doubt also that there would be a tremendous selfish interest to see that the appointments were not adverse to any particular interest.

Under another section of this bill, if the bill were passed as it is at present, an insurance company in the District could certify to the District Commissioners that the insurance company's inspector had found a boiler or pressure device safe and insurable—and notice the word “insurable” as distinct from insured—and that the Commissioners would thereupon issue a safety certificate, but anybody else who did not have such a certificate would have to have their boiler or device inspected by the District Commissioners' inspectors.

It is not customary here at least to have private enterprise policing our laws. That is a new idea here. In many other cities that is the way it is done, because the inspection is cared for. It avoids the insurance fee and the inspector's fee.

If the insurance companies feel that there ought to be only one examination, they ought to be willing to take the certificate of a fully qualified District inspector, and perhaps let them issue their policies based on the inspections of their own inspector. I think I have pointed out in my memorandum, in any event, that there should be some improvement in that section.

Mr. QUINN. Practically every city or major community in the United States has a smoke ordinance regulating smoke. We have in the city of Pittsburgh the finest engineering organization in the world devoted to that work, and we have reduced the smoke to a minimum in Pittsburgh.

Our smoke is not caused by soft coal, and has not been in the past. It has been caused by our steel and other manufacturing industries, and it came from our mills and our plants. But that has practically been eliminated, and we are practically free from smoke. But that condition has had to be changed scientifically.

(The memoranda referred to by Mr. Roberts are as follows:)

APRIL 5, 1935.

Mrs. MARY T. NORTON,

House of Representatives, Washington, D. C.

MY DEAR MRS. NORTON: At the earnest and repeated request of a large number of prominent residents and civic workers of the District of Columbia, I drafted and transmitted to you on February 25, 1935, a bill to prevent fouling of the atmosphere of the District of Columbia. You were so kind as to introduce this bill which became H. R. 6232. The bill was accompanied by a careful memorandum setting forth briefly the necessity for legislation and the reasons for the simple form of the bill.

Thereafter I was advised that a committee composed in part of District officials and in part of interested lay persons had been engaged in the preparation of a bill which had as its incidental purpose the regulation of smoke nuisances. Upon this advice I, of course, consented to the postponement of hearings until the proposed bill could be redrafted for submission, as my only object was to secure adequate legislation to cure an admitted menace to health and comfort and for this purpose I desired to cooperate with anyone interested from the same point of view.

I have at hand a copy of the new bill which you introduced, by request, on April 2, 1935. With a desire to aid the committee in a draft of legislation satisfactory to the District people, I submit the following comments on the new bill and a number of comparisons. It may be that a number of the defects which appear to be present are the result of the necessity for haste in drafts—

manship and can be eliminated. On some points of policy, however, there is no doubt but that the committee will have to exercise its own judgment.

The specific points are set forth hereafter in numerical order:

1. Although the title of the bill indicates its intention to control noxious gases, section 2 limits the "smoke provisions" by the use of the word "stack" as defined to the regulation of smoke. This may be observed also in section 6 which is the prohibitory section and tests smoke, fly ash or fumes only by a color chart. Obviously, many noxious gases when emitted are of light color as for example those produced by the domestic and commercial incinerators.

2. H. R. 7204 tests all smoke produced from private homes, locomotives, commercial dwellings, gas plants, or elsewhere "from any stack" by no. 3 Ringleman smoke chart qualified by the clause "or which is so dense as to prevent seeing through it at the point of emission into the external air." The same standards which can be applied to commercial plants with engineers in attendance with heavy consumption of fuel are not applicable to homes which are fired usually but twice daily and which are unprepared for any sudden imposition of a drastic standard.

3. H. R. 7204 has but three paragraphs which refer directly to smoke regulation, paragraph 2 and 6, and the enforcement paragraph applicable to the entire bill, paragraph 20. It is therefore predominantly a boiler inspection bill, the principal purpose of which is to transfer jurisdiction over boiler inspection and installation to a new board called the "Boiler and smoke advisory board." H. R. 6232 on the contrary is entirely devoted to the improvement of smoke regulation.

4. The boiler and smoke advisory board has inconsistent provisions of appointment since it insists that at least two members shall be mechanical engineers with "broad experience in the design and operation of heating and fuel-burning installations" and at the same time provides that they have "no financial interest in the manufacture or sale of any combustion or smoke-abatement device or any fuel." Since the maximum salary of these men is \$250 per annum it is difficult to see how they can be obtained when they can have no financial interest in the subject of their principal employment. This board also sets up a cumbersome and dangerous additional step which will tie the hand of the proposed boiler and smoke inspector and might well be the resort of persons having antipublic interests. This results from the fact that it shall "advise" the inspector and also serve as a board of appeals from him. In effect, it would be the court of last resort in all matters arising under the bill and the recourse to the Commissioners would be a nonentity.

5. Section 7 requires permits to construct or alter, section 8 requires certificates for use after construction or reconstruction, and section 9 requires certificates covering in all practically every fire containing device in the District of Columbia in private homes, commercial dwellings, or elsewhere, all defined as connected with a stack, and the extent of the inspection necessary at once under these provisions is so tremendous as to make it imperative that practically all equipment for a considerable period after the passage of this bill must be granted certificates without inspection by a great cost in the aggregate to the citizens of the District of Columbia. Some method for preserving the validity of certificates already issued for boilers until new inspection can be completed should be devised.

6. Section 9 in effect exempts all domestic hot-water vessels as through inadvertence which qualified both fire and unfired vessels operating at pressures of 15 pounds per square inch and all hot-water vessels operate at such pressures. The language should be clarified to exempt only unfired hot-water vessels if that be its intention. The question also arises as to whether or not electric-heated steam-producing or other heating devices should not be included under the bill. This section also in general language permits the exemption by the Commissioners of the District of Columbia of any vessel covered by the bill, a dangerous provision legally when unqualified.

7. *Policing by private interests.*—By section 11, page 6, line 16, the certification by an insurance company that a boiler is "safe and insurable condition" is sufficient to bar inspection by constituted authority. This is a departure from the present law under which official public inspection is required. There are no statutory prohibitions against the creation of "gyp" boiler insurance companies in the District of Columbia and the bill provides no test of the capacity of its inspectors. This would not be so important if the companies were sound and the act required that the boiler be actually insured rather than in-

surable. On several previous occasions, congressional committees have refused to pass legislation exempting on insurance certificate. If this provision be insisted upon the following amendments should be made:

1. The doing of business in insurance of pressure vessels and boilers should be permitted only after special examination of the qualifications of the company and its staff.

2. The act should provide that the boiler and smoke inspector receive notice prior to any inspection by an insurance company so that he might participate in the examination.

3. Inspectors of insurance companies should be licensed after examination.

4. Exemption on insurance inspection should be effective only during the period that adequate insurance is in force and the liability of the company should be continued until it notifies the boiler and smoke inspector to the contrary.

8. Section 21 empowers the Commissioners to make regulations but the field is so specifically covered by definitions and provisions of the act that no effective leeway is left for the Commissioners.

CONCLUSION

While it is most important that smoke regulatory legislation should be passed during this session, it is likewise most important that it be of the maximum usefulness. The inclusion of the Boiler Inspection Act is not essential to the adoption of a smoke regulatory legislation but its inspectional provisions are undoubtedly conducive to enforcement. The two acts are fundamentally opposed in legislation philosophy. H. R. 6232 does not undertake the dictation of the style of operation or fuel and requires no elaborate registration of certificates. On the contrary it punishes the condemnation of the atmosphere unreasonably under more stringent regulations by the Commissioners and controls the use of this apparatus. Full provision for an educational campaign and for supervision in the selected department is available with the appropriations authorized by the Budget Bureau under either bill. However, it is doubtful that the amount specified could possibly provide enough force to carry out the terms of H. R. 7204.

Respectfully submitted,

WILLIAM A. ROBERTS,

People's Counsel, District of Columbia.

PEOPLE'S COUNSEL'S MEMORANDUM—SMOKE NUISANCE IN THE DISTRICT OF COLUMBIA

There is attached a copy of H. R. 6232 introduced by Mrs. Norton in the House of Representatives. A companion bill has been introduced by Senator King in the Senate. I ask your consideration of this bill and, if your organization deems worthy, your support for its passage.

Some of the reasons for the passage of the bill are set forth in the following letter which was transmitted with the draft of the bill to the Senate and House Committees on the District of Columbia.

LETTER ACCOMPANYING H. R. 6232

There is attached hereto a draft of a bill to prohibit the production of smoke and similar noxious substances in the atmosphere of the District of Columbia. It is my understanding that you desire to present a measure which would be at once effective and more simple than some of the drafts which have been in preparation. Essentially the attached draft would accomplish five things:

1. It declares unnecessary smoke, etc., to be unlawful and a menace to public health and safety.

2. It authorizes and directs the Commissioners of the District of Columbia to make reasonable regulations to control the "installation and operation" of apparatus of any kind which could produce smoke or other noxious substances.

3. It holds the Commissioners responsible for the enforcement of the law and authorizes them to employ any officer or employee in the enforcement of the law.

4. It provides for simple enforcement by fine in the police court of the District of Columbia.

5. It repeals the present inefficient statute.

The proposed act is intended to be simple and flexible so as to permit increasingly rigid enforcement as time passes and the technic of smoke abatement improves. Public opinion would compel the Commissioners to revise their regulations and to step up the enforcement every time smoke becomes a nuisance.

In various complex drafts of legislation an effort is made in the act itself to establish tolerances and to include limitations on types of fuel and apparatus. This is all avoided by the use of a single word "unnecessary" in the first section of the attached draft. Obviously, it would be impracticable to prohibit necessary smoke and what is necessary must be determined with respect to each individual producer. It may be granted that the hard-coal producers and dealers will try to prohibit the use of soft coal and the soft-coal producers and dealers will try to prohibit the use of oil and the gas company will try to prohibit the use of all other fuels. It is obvious that each of the manufacturers of a given type of combustion apparatus will endeavor to preserve unhampered his own operation and at the same time restrict that of his competitors. The proposed bill takes no sides with any selfish interest and merely asserts that smoke, however produced, is a nuisance and menace.

The enforcement provisions of the proposed draft would permit the use of the entire police and fire departments, the building inspectors, and all other skilled officials and employees in smoke abatement campaigns and would permit the Commissioners to place the administrative duty of smoke prevention, a most important function, in the inspectional divisions where it belongs instead of in the health department where it is located by the act of 1899.

It must be granted that there are some who will oppose the proposed draft because it does not specifically provide for a large technical staff of highly paid combustion engineers who would enforce their own ideas as to the installation of apparatus on all builders and home owners of the District. However, Congress has in the past indicated that it is determined to concentrate power and authority together with responsibility in the Commissioners and to avoid setting up further independent agencies. This attitude is unquestionably correct and the present bill will permit of the employment of all necessary experts for which Congress will appropriate funds. The tremendous damage to health and property now being done by the improper use of fuels and the careless emission of dust and noxious gases justifies a liberal appropriation to start the work of smoke abatement and an adequate educational campaign on the use of such apparatus.

There is no occasion to review popular sentiment for smoke abatement. A petition signed by several thousands of names is in the hands of the House District Committee and numerous associations and groups have demanded smoke abatement. However, reference to some of the statistics and specific mention of certain of the evils of smoke and dust might be convenient.

In a recent study, the city of New York estimated the cost of damage due to smoke on buildings alone at \$96,000,000 per annum, or approximately \$56 per family unit. This is exclusive of any loss for loss of working time, loss of eyesight or accelerated mortalities due to pulmonary diseases. In Washington, approximately one-fourteenth as large, the value of public buildings alone is estimated at \$300,000,000. An increase in cost of maintenance and depreciation at the rate of 5 percent per annum attributable directly to smoke and its associated sulphuric acid deposits is reasonable, or approximately \$15,000,000 in hidden cost of smoke to the Government in structures alone. A casual estimate of the damage to clothes and other fabrics as a result of soot, dust, and acid deposits of only \$2 per person would add another \$1,000,000, but the greatest of all losses are physical.

For example, deaths from pneumonia in the District of Columbia in 1934 numbered 653 or at the rate of 131.9 per 100,000, deaths from pulmonary tuberculosis were 520 or at the rate of 105 per 100,000 and deaths from influenza 39, a very light year, or at the rate of 7.9 per 100,000, or an aggregate number of deaths of 1,212 in diseases attributable in large part to impurities in the atmosphere.

Washington is notoriously troubled with sinus disorders. Forty specialists receive their entire income from treating this one ailment. Again these and similar respiratory trouble are aggravated by smoke.

The average mortality from these diseases in 1933 for the United States as a whole per 100,000 population were as follows: Influenza, 26.4; pneumonia (bronchial), 29.6; tuberculosis (respiratory), 53.6; pneumonia (lobar), 36.4. A comparison between urban and rural districts is as follows:

Urban—cities of 10,000 or over

	Urban	Rural
Pneumonia (bronchial).....	34.8	24.9
Pneumonia (lobar).....	43.0	30.3
Tuberculosis ¹ (respiratory).....	51.1	56.0
Influenza.....	18.3	33.9

¹ Many sanitarium tuberculosis deaths listed as rural.

Substantially this disparity in mortality may be attributed to the smoke with which the cities are cursed. In neither tabulation does Washington appear to advantage.

The improper use of soft coal commercially and in residences as well as by stationary engines and locomotives has increased very considerably in the depression years and oil-burning apparatus with poor adjustment is almost equally guilty as a source of nuisance.

The enactment of the bill proposed is therefore justified both on the basis of actual saving of money and for the prevention of human suffering and death. The intelligent use of prevention propaganda by skilled officials can eliminate much smoke without requiring major investment in change of apparatus and the penal sections of the act will quickly bring to task those who insist on disregarding the welfare of others.

I sincerely hope that you will see fit to introduce this bill and submit it to hearing before the appropriate subcommittee where the interested parties may have an opportunity to present their views.

Yours respectfully,

WILLIAM A. ROBERTS,
People's Counsel, D. C.

Mrs. JENCKES. Mr. Prettyman, do you desire to make any statement today?

**STATEMENT OF E. BARRETT PRETTYMAN, CORPORATION
COUNSEL**

Mr. PRETTYMAN. I believe not, Madam Chairman. Anything I would say would be in regard to the form of the bill which was drawn up by our committee, and Captain Oram and Captain Clark, who were on the committee, are here, if you desire to have a statement by them today.

There are two or three things I would like to call your attention to before we get through with the subject.

Mrs. JENCKES. This is a preliminary hearing. When we decide upon the date for the next hearing, I will try to have the members of the committee excused from the session of the House so that we will not have to stop at 12 o'clock, and will have all the time necessary to properly consider the proposed legislation.

Mr. PRETTYMAN. Madam Chairman, I think I ought to say here, in order that those who discuss the matter hereafter will have it in mind, that this bill, H. R. 7204, is modeled on the standard smoke ordinance originally drawn by the Bureau of Mines and promulgated in March 1930. The major features of the pending bill, H. R. 7204, are drawn from that model smoke ordinance. Of course, we have added provision for an inspection force and have changed some other

things, but basically, that is the point at which this bill begins. Of course, a standard smoke ordinance has been adopted in a great many cities.

Mrs. JENCKES. Almost all the big cities have smoke regulations. But in Washington we have smoke from various things. We have smoke from oil, smoke from trash, smoke from bituminous coal and from anthracite coal. People let the smoke come out of their chimneys at different times as long as they please during the day in Washington. Those are things for the citizens here to think about. This is the home of the residents of the District of Columbia.

But every citizen of the United States should have a vital interest in this city because it is our Capital.

I came to Washington with that thought, and while I am here it is my home, and I am making a home here for my daughter, and I am just as much interested as the person who owns the finest home in Washington, who was born here and who expects to die here.

Is there anyone else who desires to make a preliminary statement in reference to this matter?

STATEMENT OF CAPT. HOWARD F. CLARK, ASSISTANT TO THE ENGINEER COMMISSIONER

Captain CLARK. Madam Chairman, I was chairman of the committee which prepared the text of H. R. 7204. I have heard Mr. Roberts this morning and I would like to make this statement, probably to explain why there were two bills.

The committee was quite astounded one morning to read that a smoke bill had been introduced in Congress. I immediately contacted Mr. Roberts, and he was apparently unaware of our efforts in connection with this bill.

I have no doubt whatever that the technical points Mr. Roberts has brought up today can be adjusted.

I discussed this matter last night at considerable length. The District Commissioners want to satisfy the people of the District of Columbia; if they do not want a smoke bill, all right. We assembled this data together from cities that have model smoke ordinances and we have made what we call a long form. This represents the thought of a large committee of citizens, including engineers.

Mr. Roberts says there is nobody they could get to work on the advisory board. But I think we will have one or two men at the next meeting who are practical mechanical engineers, who own no shares in any stoker, or anything of that sort.

Mr. ROBERTS. In order to clarify one point, let me say that I intend to cooperate in every possible way with everybody who wants to get through a good smoke bill. I do not want to be an obstructionist.

STATEMENT OF FREDERIC D. McKENNEY, WASHINGTON, D. C., REPRESENTING THE WASHINGTON TERMINAL CO.

Mr. McKENNEY. Madam Chairman, let me say I came to Washington without any volition on my own part, and have remained here ever since. I am a native-born citizen of Washington and have lived here practicing my profession all my life.

I am a property owner in Washington of some proportions, and to my great grief, and sometimes great distress, I pay taxes in some considerable amount. I am extremely interested from that standpoint in a smoke-suppression bill, if suppression is a proper word to use.

For many years I have in my professional relationships represented, among other activities, railroads operating in the District. I am appearing here today not only as a private citizen and taxpayer and resident of the District, but also in professional capacity representing the Washington Terminal Co. and some four or five other railroad companies that operate in and through the District.

I have no doubt that it is true that this bill has been under consideration in the office of the Engineer Commissioner for a year past, but it is only fair to say that so far as I am aware no representative of the railroad interests operating in the District have ever been requested to come in and consider any terms proposed to be put forward in this draft, or to make any suggestions that they might have to make with regard to the situation.

I am authorized to say that the railroads are entirely willing to cooperate with the District of Columbia in every way in connection with a smoke-suppression bill. And we want to make it perfectly plain that the railroads have been so cooperating under existing law, which has been in existence for 20 some years. Although it is said it has not been a success, nevertheless, while the railroads are not covered by that law, there has been throughout the railroad areas in the District of Columbia operations under the supervision of a smoke committee composed of men whose business it is to see that there is no emission of unnecessary smoke in that area.

Fifteen years ago when that was started, we had many complaints. But those complaints immediately fell off under the supervisory work of the committee I have referred to until within the last 4 or 5 years I think there have been scarcely half a dozen of them.

With respect to the boiler-inspection provisions, those are most important from the railroad standpoint. We have what they call unfired pressure apparatus. That may mean a great many different things.

We have underground tanks that blow air, and some of our men are day by day and hour by hour on the inspection job to keep those tanks in proper condition and ready to take care of these things in an emergency.

There is a provision here so that the railroads cannot operate these tanks, or many of them, unless they first have a permit to do so; and in the second place without having inspection permits, and that sort of thing.

There are certain provisions in regard to this inspection for railroad locomotives that are not broad enough, and the railroad representatives, through their own mechanical men, should have been called into consultation with these gentlemen engaged in formulating these details to find out what is necessary to permit these railroads to operate efficiently, because this city and its inhabitants depend upon their so operating.

Mrs. JENCKES. We thank you for your statement and we hope you will come back when we have the adjourned hearing.

Mr. QUINN. What kind of power do they use in the terminal?

Mr. McKENNEY. The terminal uses soft coal; soft coal is used by the railroads at the terminal.

Mr. QUINN. Is that soft coal that the railroads get here used for fuel?

Mr. McKENNEY. It is used for fuel and we fire it so that there is scarcely a complaint. I was told this morning there was a complaint from some Brookland citizens. But I had never heard anything about it before. We are ready to remedy it, when we are told about it.

STATEMENT OF MRS. H. L. PARKINSON, CHAIRMAN, CIVIC COMMITTEE, WOMEN'S CITY CLUB, WASHINGTON, D. C.

Mrs. PARKINSON. Madam Chairman, may I put the Women's City Club on record by saying that approximately 700 of our members have signed a smoke petition. We have gone on record in favor of the Roberts bill because we like its simplicity and lack of detail. We think it is elastic enough.

Mrs. JENCKES. Will you come to the next hearing and be ready to answer some questions?

Mrs. PARKINSON. Yes.

Mrs. JENCKES. I know what the City Club has done in this direction and I am very much in sympathy with it.

We have set Tuesday, April 16, at 10 a. m., as the time for the next hearing on this matter, and anyone who wants to be heard will be given an opportunity at that time.

There have been a number of communications from organizations and citizens of the District received in connection with this legislation, and if there is no objection they will be inserted in the record.

(The communications above referred to are as follows:)

Hon. MARY T. NORTON,

Chairman Committee on the District of Columbia.

House of Representatives, Washington, D. C.

MY DEAR MRS. NORTON: The Commissioners of the District of Columbia transmit herewith the draft of a bill to control the emission of smoke in the District of Columbia, and also to provide for the control of the operation of high-pressure steam boilers, which they request be introduced and enacted during the present session of the Congress.

The necessity for a smoke law in the District of Columbia need hardly be stated, being well known to Members of Congress. The regulation of the operation of steam boilers, while somewhat different from the smoke problem, is, nevertheless, related to it, and requires the services of the same type of officials and employees. These boiler-inspector provisions are for reasons of safety.

The attached draft provides for a division of smoke regulation and boiler inspection in the District, to be composed of the necessary officers, engineers, and inspectors. It also provides for an advisory board of citizens who will act as advisors on engineering policies and regulations, and will also act as an appeal board from decisions of the boiler and smoke inspector.

The proposed bill prohibits the emission of smoke, etc., of a shade greater than no. 3 of the Ringleman chart. It provides for permits to construct or reconstruct furnaces, smokestacks, etc., and also for certificates of use for such new or reconstructed furnaces, stacks, etc., and also for certificates of inspection of steam boilers or unfired pressure vessels, operating at high pressure. The bill also provides that such certificates may be suspended or revoked if the boiler or pressure vessel be unsafe or unfit for operation.

Fees for the issuance of permits and certificates, and for inspections are provided. The bill also provides that the use of any furnace, etc., in violation

of the act may be enjoined as a common nuisance, and also that the person so violating the act may be subject to criminal penalties.

Section 3 of the bill contemplates the creation of a division of smoke regulation and boiler inspection in the engineer department and provides personnel for that purpose. It is estimated that the cost of regulation and inspection would amount to \$25,000 per annum, while revenue is estimated at \$12,000 per annum.

Steam boilers or unfired pressure vessels in boats, locomotives, street cars, etc., operating under the regulations of the Federal agency or the public utilities, are exempt from the provisions in respect to steam boilers, but are not exempt from the provisions of the bill respecting the emission of smoke.

The Commissioners forwarded a copy of the proposed measure to the Director of the Bureau of the Budget, as required by Budget Circular No. 49, as amended. The Acting Director of the Bureau of the Budget has informed the Commissioners that insofar as the financial program of the President is concerned, there is no objection to the proposed legislation.

Respectfully yours,

President Board of Commissioners of the District of Columbia.

ANALYSIS OF BITUMINOUS COAL BILL

(Introduced in both Houses—Senate bill 1417, by Senator Guffey; House bill 4661, by Representative Snyder)

The bill is drawn under two titles, the first dealing with the regulation of the industry, and the second with the creation of a national coal reserve.

TITLE I

Under title I there is a congressional declaration that the production and distribution of bituminous coal are affected with a national public interest and, for reasons set out, should be regarded as a public utility.

Section 2 establishes in the Department of the Interior a National Bituminous Coal Commission of five members to be appointed by the President; three of whom shall be disinterested, and of the other two, one shall be a representative of the producers, and one a representative of the employees. The general powers of the Commission are set out, and it is provided that on any court review its finding of facts, if supported by any proper evidence, shall be conclusive.

Section 3 proposes an excise tax of 25 percent on the selling price of all coal at the mine, with a drawback of 99 percent of this tax to producers who accept and comply with the code set out in section 4.

SECTION 4 OF THE CODE

Section 4 outlines in detail the conditions and obligations of the code under which the producers shall operate to enjoy the benefits of the drawback on taxes. It is provided that the antitrust laws shall not apply to such code members complying with the act. The code is set out in the act to avoid any question of delegated legislative power, and is divided into three parts.

PART I OF CODE: PRODUCTION CONTROL

The first part deals with production. It provides for a National Coal Producers Board and 24 district boards, the schedule of districts being appended to the bill, and their territorial arrangement being subject to change by the Commission. The schedule of districts appended to the bill follows the code authority divisions which have been operating under the Bituminous Coal Code of the National Recovery Administration.

Allotments

The national board is to make maximum allotments of tonnage to the various districts, based upon two factors, one the average annual output of the district since 1918 as representing its production history and the other being the out

put for 1934 as representing its current market service. From time to time, under direction of the Commission, periodic allocations of district tonnage deemed necessary for current market requirements shall be made in accordance with the ratios established in the maximum allocations. If any district feels aggrieved it can apply to the Commission for an increase of its allotment which will be granted upon a finding by the Commission that the current market requirement or the current service of the coal or coals of the district warrant the increase in the public interest.

The district boards, respectively, allot quotas to the various mines in the district upon the basis of the average annual output of the mine since 1929; and, under the direction of the Commission, these district boards fix the quotas for each mine for current market demands. As in the case of allotments to districts, quotas to mines may be increased by the Commission on its finding that the market service or requirements for the coal produced, justifies the increase. These appeals to the Commission are intended to avoid any injustice that might come from a rigid formula for allotments.

It is provided that no code member may transfer his quota from one mine to another, except upon consent of the Commission after hearing with due notice to the employees affected.

Every second year after the passage of the act new standard allotments may be made, based on the operation of the law during the previous 2 years. And in its first annual report to the secretary for transmission to Congress, the Commission shall report fully on the operation of this allotment plan with such recommendations as they deem proper.

No code member and no one desiring to become a member of the code can open a new mine except on the finding of the Commission that the market requirements justify such new opening in the public interest.

PART II OF THE CODE: MARKETING

A minimum free-on-board mine price below which no coal can be sold is determined by the average cost of production of coal in the respective districts. These cost items are labor, supplies, power, workmen's compensation, taxes, insurance, administration, and all other direct expenses of production.

Maximum prices are to be fixed as follows: The district boards are to submit to the Commission their maximum prices on all coals produced in the district. The Commission may modify or approve the same, but if the Commission fixes such maximum prices they shall be sufficient to provide a fair return on the investment. The Commission may require reports from producers which shall be kept confidential.

The price provisions of the act shall not be evaded through the use of docks or storage facilities or the use of subsidiaries or affiliated sales companies.

All sales and contracts for sale are made subject to the operation of the code prices provided for.

Code members may establish cooperative marketing agencies.

In order to promote the fair movement of allocated coal in the competitive markets it is provided that district boards, or marketing agencies, with the approval of the Commission, or that the Commission itself, may correlate prices in the principal markets served by competitive districts. This correlation of prices is to be based on the grades, character, qualities, and use values of the coals and the current demands in the market. Such correlated delivery prices are to be made with due respect for the minimum and maximum free-on-board mine prices.

PART III OF THE CODE: LABOR RELATIONS

The rights of employees following the general outline of section 7 (a) of the Recovery Act. A Bituminous Coal Labor Board is created of three members to be appointed by the President, one to be impartial, and of the other two one is to be a representative of the employers, and one to be a representative of the employees. The duties of the labor board are designated in detail. It is also provided that where producers of more than one-half of the annual tonnage of the Nation and representatives of more than one-half of all employees have agreed upon maximum hours of labor, these maximum hours shall be observed by all code members. Also, that when any collective wage agreement is made between more than one-half of the producers in any district or groups of districts, and more than one-half of the employees therein, the wages agreed upon shall be accepted as the minimum wages for all such classi-

fications of labor by the code members operating in such district or group of districts.

This concludes the outline of the code, all of which is contained in section 4 of the bill.

Section 5 provides for the cancelation of the membership of any coal producer in the code and the termination of his right to the drawback, and provides further the conditions under which he can be restored to membership.

Section 6 provides for the usual penalties in the collection of taxes.

Section 7 authorizes the members of the Commission and of the labor board to administer oaths to witnesses and to enforce their attendance by subpoenas.

Section 8 provides that if any producer sees fit to operate outside the provisions of the code, he shall not only pay the full tax with no drawback thereon, but shall be subject to other provisions of the Federal laws regulating industries and the labor rights of employees.

Section 9 provides that State laws regulating the mining of coal not inconsistent with the act shall not be affected by it.

Section 10 provides that the Interstate Commerce Commission shall issue no certificates of convenience or necessity authorizing extension of railroad facilities for the service of mines producing bituminous coal for commercial marketing except upon approval of the Coal Commission.

Section 11 provides that every corporation mining coal and shipping it in interstate commerce shall as a prerequisite to its right as a corporation so to do, file with the Commission its acceptance of the provisions of title I.

The bill further provides that the Commission shall study and report to Congress in relation to the exportation and importation of coal, the economic and safe operation of mines, the rehabilitation of displaced mine workers and the problem of lessening distributing costs.

It is to be noted that acceptance and compliance with the code by the producers rests upon the application of the tax, but it is believed that this tax is sufficient to secure compliance of all producers. The drawback which code members will enjoy will leave a balance of about one-half cent per ton which will go into the Treasury of the Government. As this will amount to about \$1,500,000 per year it will furnish far more revenue than will be needed by the Government to administer the act.

The bill itself is drawn along lines contemplated by the National Resources Board in its mineral section report to the President.

TITLE II—THE BITUMINOUS COAL RESERVE

Section 1 contains the congressional declaration respecting the provisions of the title.

Section 2 provides that upon approval by the National Bituminous Coal Commission, the Secretary of the Treasury is authorized to purchase lands containing bituminous coal deposits suitable for mining.

Section 3 provides that owners may make voluntary offers subject to acceptance under conditions set out in the section.

Section 4 provides for rights of condemnation as incident to the establishment of this coal reserve; and authorizes such lands as are suitable therefor to be administered by the National Forest Reservation Commission.

Section 5 provides that no coal lands of this reserve shall be used for mining except in the emergency of a coal shortage or in time of war.

Section 6 places all the public lands containing coal deposits in this coal reserve.

Section 7 provides for rights-of-way and easements across the lands.

Section 8 appropriates \$500,000,000 to be provided by a bond issue of \$500,000,000 to be expended as follows: Where lands are purchased the bonds are to be accepted at par and where lands are condemned the bonds are to be sold at not less than par to provide funds for such condemnation.

Section 9 levies a tax of 10 cents per ton on the annual bituminous coal output with the direction that not more than 1 cent per ton shall be levied for any 1 year for each \$50,000,000 of the bonds issued or sold for purchase of condemnation. Of the taxes so levied 40 percent shall go into a sinking fund, and 60 percent shall go into a fund for the rehabilitation of miners displaced from employment by the operation of title II.

Section 10 provides that all revenues derived from these coal lands shall be paid into the sinking fund for the service and redemption of the bonds.

Sincerely yours,

J. BUELL SNYDER, *Member of Congress.*

AMERICAN CIVIC ASSOCIATION, INC.,
Washington, D. C., April 5, 1935.

MRS. VIRGINIA E. JENCKES,
Chairman Subcommittee,
Committee on the District of Columbia,
House of Representatives, Washington, D. C.

MY DEAR MRS. JENCKES: I understand that there is to be a hearing this morning on bills to control the smoke nuisance in the District of Columbia.

I may say that the Federal City Committee of the American Civic Association has for a number of years been in favor of adequate smoke regulation, and we hope that Congress will pass a bill which will decrease the smoke nuisance.

We have not had opportunity to study the provisions of the most recent bill introduced but will be glad to file a supplementary statement after the hearing this morning or if there is to be a second hearing appear in connection with the bill.

We believe that your interest in control of smoke will prove a distinct service to the District of Columbia.

Very sincerely yours,

HARLEAN JAMES,
Executive Secretary.

NATIONAL COAL ASSOCIATION,
Washington, D. C., April 4, 1935.

MRS. VIRGINIA E. JENCKES,
House of Representatives, Washington, D. C.

DEAR MRS. JENCKES: Yours letter of the 2d just reached me this morning announcing a hearing on H. R. 6232, a bill to prevent the fouling of the atmosphere in the District of Columbia by smoke and other foreign substances. This is one of the most important matters that you will have to come before your committee in a long time, and as your hearings are to commence tomorrow, I am sure you will appreciate the fact that the coal industry is not in a position on this short notice to really present a proper case. I have in mind that H. R. 7204 was introduced in the House yesterday, I believe, by Chairman Norton of the District of Columbia Committee, and from what I learn is the bill that is to be sponsored by the Commissioners of the District of Columbia.

I have telegraphed representatives of the coal industry in the districts that ordinarily supply coal to the District of Columbia so that they may immediately interest themselves in this matter, but I am quite sure that you appreciate it will be impossible for them to formulate their ideas and be here to present them tomorrow morning. I suggest an adjourned hearing, particularly in the light of H. R. 7204, and there should be at least a week's notice before the hearing is set down, for other engagements must be given consideration.

I appreciate deeply your interest in this matter on behalf of the bituminous coal industry and hope to be able to be of some real assistance to you.

Yours very truly,

J. D. BATTLE,
Executive Secretary.

MOUNT HOPE, W. VA., April 5, 1935.

HON. VIRGINIA E. JENCKES,
Member Congress, House of Representatives:

We have just been advised by wire of meeting your subcommittee of District Columbia last smoke bill assigned for hearing 10 o'clock this morning. We are very much interested in this bill as are other smokeless operators and in view fact we have not had opportunity read bill be have been unable prepare any evidence either for or against it. Please postpone hearings on this bill until such time as to permit us to analyze contents thereof.

NEW RIVER COAL OPERATORS ASSOCIATIONS,
S. C. HIGGINS, Secretary.

CHARLESTON, W. VA., April 4, 1935.

HON. VIRGINIA E. JENCKES,

Member of Congress, Washington, D. C.:

Understand hearing set for tomorrow on District smoke bills. We have not yet seen proposed bills. We beg for continuance for week or 10 days so that we may familiarize ourselves with bills and prepare evidence.

NEW RIVER COAL CO.

PUBLIC UTILITIES COMMISSION OF THE DISTRICT OF COLUMBIA.

Washington, D. C., February 25, 1935.

MRS. MARY T. NORTON,

Chairman Committee on the District of Columbia,

House Office Building, Washington, D. C.

MY DEAR MRS. NORTON: There is attached hereto a draft of a bill to prohibit the production of smoke and similar noxious substances in the atmosphere of the District of Columbia. It is my understanding that you desire to present a measure which would be at once effective and more simple than some of the drafts which have been in preparation. Essentially the attached draft would accomplish five things:

1. It declares unnecessary smoke, etc., to be unlawful and a menace to public health and safety.

2. It authorizes and directs the Commissioners of the District of Columbia to make reasonable regulations to control the "installation and operation" of apparatus of any kind which could produce smoke or other noxious substances.

3. It holds the Commissioners responsible for the enforcement of the law and authorizes them to employ any officer or employee in the enforcement of the law.

4. It provides for simple enforcement by fine in the police court of the District of Columbia.

5. It repeals the present inefficient statute.

The proposed act is intended to be simple and flexible so as to permit increasingly rigid enforcement as time passes and the technic of smoke abatement improves. Public opinion would compel the Commissioners to revise their regulations and to step up the enforcement every time smoke becomes a nuisance.

In various complex drafts of legislation an effort is made in the act itself to establish tolerances and to include limitations on types of fuel and apparatus. This is all avoided by the use of a single word "unnecessary" in the first section of the attached draft. Obviously, it would be impracticable to prohibit necessary smoke and what is necessary must be determined with respect to each individual producer. It may be granted that the hard coal producers and dealers will try to prohibit the use of soft coal and the soft-coal producers and dealers will try to prohibit the use of oil and the gas company will try to prohibit the use of all other fuels. It is obvious that each of the manufacturers of a given type of combustion apparatus will endeavor to preserve unhampered his own operation and at the same time restrict that of his competitors. The proposed bill takes no sides with any selfish interest and merely asserts that smoke, however produced, is a nuisance and menace.

The enforcement provisions of the proposed draft would permit the use of the entire police and fire departments, the building inspectors, and all other skilled officials and employees in smoke-abatement campaigns, and would permit the Commissioners to place the administrative duty of smoke prevention, a most important function, in the inspectional divisions where it belongs instead of in the health department where it is located by the act of 1899.

It must be granted that there are some who will oppose the proposed draft because it does not specifically provide for a large technical staff of highly paid combustion engineers who would enforce their own ideas as to the installation of apparatus on all builders and home owners of the District. However, Congress has in the past indicated that it is determined to concentrate power and authority together with responsibility in the Commissioners and to avoid setting up further independent agencies. This attitude is unquestionably correct, and the present bill will permit of the employment of all necessary experts for which Congress will appropriate funds. The tremendous damage to health and property now being done by the improper use of fuels and the careless emission of dust and noxious gases justifies a liberal appropriation to start the work of smoke abatement and an adequate educational campaign on the use of such apparatus.

NEED FOR THE LEGISLATION

There is no occasion to review popular sentiment for smoke abatement. A petition signed by several thousands of names is in the hands of the House District Committee and numerous associations and groups have demanded smoke abatement. However, reference to some of the statistics and specific mention of certain of the evils of smoke and dust might be convenient.

In a recent study, the city of New York estimated the cost of damage due to smoke on buildings alone at \$96,000,000 per annum, or approximately \$56 per family unit. This is exclusive of any loss for loss of working time, loss of eyesight, or accelerated mortalities due to pulmonary diseases. In Washington, approximately one-fourteenth as large, the value of public buildings alone is estimated at \$300,000,000. An increase in cost of maintenance and depreciation at the rate of 5 percent per annum attributable directly to smoke and its associated sulphuric acid deposits is reasonable, or approximately \$15,000,000 in hidden cost of smoke to the Government in structures alone. A casual estimate of the damage to clothes and other fabrics as a result of soot, dust, and acid deposits of only \$2 per person would add another \$1,000,000. But the greatest of all losses are physical.

For example, deaths from pneumonia in the District of Columbia in 1934 numbered 653, or at the rate of 131.9 per 100,000; deaths from pulmonary tuberculosis were 520, or at the rate of 105 per 100,000; and deaths from influenza 39, a very light year, or at the rate of 7.9 per 100,000; or an aggregate number of deaths of 1,212 in diseases attributable in large part to impurities in the atmosphere.

Washington is notoriously troubled with sinus disorders. Forty specialists receive their entire income from treating this one ailment. Again these and similar respiratory trouble are aggravated by smoke.

The average mortality from these diseases in 1933 for the United States as a whole per 100,000 population were as follows: Influenza, 26.4; tuberculosis (respiratory), 53.6; pneumonia (bronchial), 29.6; pneumonia (lobar), 36.4. A comparison between urban and rural districts is as follows:

Urban—cities of 10,000 or over

	Urban	Rural
Pneumonia (bronchial).....	34.8	24.9
Pneumonia (lobar).....	43.0	30.3
Tuberculosis ¹ (respiratory).....	51.1	56.0
Influenza.....	18.3	33.9

¹ Many sanitarium tuberculosis deaths listed as rural.

Substantially this disparity in mortality may be attributed to the smoke with which the cities are cursed. In neither tabulation does Washington appear to advantage.

The improper use of soft coal commercially and in residences as well as by stationary engines and locomotives has increased very considerably in the depression years, and oil-burning apparatus with poor adjustment is almost equally guilty as a source of nuisance.

The enactment of the bill proposed is, therefore, justified both on the basis of actual saving of money and for the prevention of human suffering and death. The intelligent use of prevention propaganda by skilled officials can eliminate much smoke without requiring major investment in change of apparatus and the penal sections of the act will quickly bring to task those who insist on disregarding the welfare of others.

I sincerely hope that you will see fit to introduce this bill and submit it to hearing before the appropriate subcommittee where the interested parties may have an opportunity to present their views.

Yours respectfully,

WILLIAM A. ROBERTS,
Peoples' Counsel District of Columbia.

DEPARTMENT OF SMOKE REGULATION,
BOARD OF HEALTH AND VITAL STATISTICS OF HUDSON COUNTY,
Jersey City, N. J., March 12, 1935.

HON. MARY T. NORTON,

House of Representatives, Washington, D. C.

MY DEAR MRS. NORTON: Thank you for the nice things you say about this department in your letter of the 11th. I surely appreciate it.

I am enclosing copy of our ordinance, together with our rules and regulations. Just at present, our regulations are being revised and the new ones are in the hands of the printer. They will, doubtless, be ready in a week or so. My 1934 annual report is also in the hands of the printer and should be finished shortly. I will be very glad to send you one as soon as we get them.

In the ordinance, I would suggest a change in the definition of "smokeless fuel" (Article 2). I would define smokeless fuel as a fuel containing less than 14 percent of volatile matter in place of the 21 percent in our ordinance. For your information, a new-model smoke law (which will shortly be completed by the pure-air committee of the American Society of Mechanical Engineers) is patterned very closely after the Hudson County ordinance.

If you have not already done so, I might suggest that you see Dr. O. P. Hood, Chief Engineer of the Bureau of Mines. He is an authority on smoke abatement, and is a very charming gentleman. I know he would be glad to help you.

If there is anything else I can do, please command me.

Sincerely yours,

WILLIAM G. CHRISTY,
Smoke Abatement Engineer.

COUNTY OF HUDSON, N. J.—BOARD OF HEALTH AND VITAL STATISTICS

ORDINANCES RELATING TO SMOKE ABATEMENT, JANUARY 1931

(Department of smoke regulation: William G. Christy, M. E., smoke-abatement engineer; John L. Hodges, M. E., deputy smoke-abatement engineer)

AN ORDINANCE CREATING A DEPARTMENT OF SMOKE REGULATION, REGULATING THE EMISSION OF SMOKE AND OTHER SOLIDS, GASES, OR FUMES FROM ANY CHIMNEY, SMOKESTACK, OR OTHER SOURCE WITHIN THE CORPORATE LIMITS OF THE COUNTY OF HUDSON, N. J., AND PRESCRIBING PENALTIES FOR THE VIOLATION OF THE PROVISIONS THEREIN

The Board of Health and Vital Statistics of Hudson County does ordain:

ARTICLE 1

SECTION 1. That there be and is hereby created a department of smoke regulation.

SEC. 2. That the department of smoke regulation shall consist of the following:

(a) An advisory board of three engineers, who shall serve without pay, except when acting as a board of appeals as hereinafter provided.

(b) A smoke-abatement engineer at a salary to be fixed by said board of health and vital statistics and who shall be an engineer having the same qualifications as are required for active membership in the American Society of Mechanical Engineers and qualified by training and experience in the theory and practice of the construction and operation of steam boilers and furnaces and also in the theory and practice of smoke abatement and prevention.

(c) A deputy smoke-abatement engineer or deputy smoke-abatement engineers upon the recommendation of the smoke-abatement engineer, may be appointed at a salary or salaries to be fixed by said board of health and vital statistics, and said engineer or engineers so appointed shall be an engineer or engineers having the same qualifications as are required for active membership in the American Society of Mechanical Engineers and qualified by training and experience in the theory and practice of the construction and operation of steam boilers and furnaces and the firing of furnaces.

(d) The board of health and vital statistics may, upon the recommendation of the smoke-abatement engineer, appoint such other inspectors and employees in the department of smoke regulation as may be necessary for the proper performance of the work of the said department at such salaries as may be fixed by the board of health and vital statistics.

ARTICLE 2

"Persons" shall be considered as referring to all individuals, partnerships, or associations other than corporations.

"Corporations" shall be considered as including all bodies corporate, joint-stock companies or associations, domestic and foreign, their lessees, assignees, trustees, receivers, and other successor in interest having any of the powers or privileges of corporation not possessed by individuals, partnerships, or unincorporated associations.

"Chart" shall be considered as referring to the Ringelmann smoke chart as published and used by the United States Bureau of Mines.

"Stack" shall be defined as including chimney, smokestacks, structures, and openings of any kind whatsoever capable of emitting smoke. Smoke stacks on locomotive roundhouses shall be deemed parts of locomotives beneath them for the time being.

"Smokeless fuel" shall be defined as a fuel containing less than 21 percent of volatile matter.

"Advisory board" shall be considered as referring to the board of engineers appointed by the board to act as advisors on engineering questions to the smoke abatement engineer, department of smoke regulation of the county.

ARTICLE 3

The production or emission within the county of smoke, fly ash, or fumes, the shade of which is equal to or greater than no. 3 of the Ringelmann chart, or which is so dense as to prevent seeing through it at the point of emission into the external air, from any stack or open fire, except that of a locomotive or steamboat, for a period or for periods aggregating 2 minutes or more in any period of 15 minutes, and the emission of such smoke, fly ash, or fumes from any locomotive or steamboat for a period or for periods aggregating 30 seconds or more in any period of 3 minutes, is hereby prohibited.

ARTICLE 3A

The production or emission within the county of smoke, fly ash or fumes, the shade of which is equal to or greater than no. 2 of the Ringelmann chart, or which is so dense as to be dimly seen through at the point of emission into the external air, from any stack or open fire, except that of a locomotive or steamboat, for a period or for periods aggregating 12 minutes or more in any period of 1 hour, and the emission of such smoke, fly ash, or fumes from any locomotive or steamboat for a period or for periods aggregating 4 minutes in any period of 15 minutes, is hereby prohibited.

ARTICLE 4

No person or corporation shall construct, install, reconstruct, alter, or repair any furnace, boiler furnace, stack, or other apparatus connected with the stack, including portable apparatus, unless he or it shall make application in writing to the department of smoke regulation on the form furnished by the said department for a permit for such construction, installation, reconstruction, alteration, or repair, and in and by such application shall give the plans and specifications, showing the style and dimensions of the furnace, boiler furnace, stack, and/or other apparatus connected with a stack intended to be used, a description of the building or part thereof in which such furnace, boiler furnace, or other apparatus is located, including the means provided for regulating the temperature of such building or part thereof and ventilating the same, and generally all provisions made for preventing smoke, together with a statement of the kind of fuel proposed to be used and of the operating requirements to be made of the furnace or furnaces referred to therein, and unless such application shall be passed upon by the department of smoke regulation and approved in

writing and a permit issued as hereinafter provided: *Provided, however, That* minor or emergency repairs which do not increase the capacity of such furnace, or which do not involve any substantial alteration in such furnace, boiler furnace, stack or other apparatus and which do not involve any alteration in the method or efficiency of smoke prevention, may be made without a permit.

Any application shall be approved or rejected within 10 days after it is filed with the office of the department of smoke regulation.

Upon the approval of any application, a copy which shall be left on file in the office of the department of smoke regulation, and upon the payment of the fees hereinafter provided, the department of smoke regulation shall issue a permit for the construction, installation, reconstruction, alteration or repair of such furnace, boiler, or other apparatus.

In the event that any such application is rejected by the smoke abatement engineer, department of smoke regulation, the applicant has the right to appeal from his decision to the advisory board. Such appeal shall be made in writing to the smoke abatement engineer, department of smoke regulation, who shall call a special meeting of the advisory board within 3 days for the consideration of the matter. If a majority of the members of the advisory board present shall be of the opinion that the application calls for such construction, installation, reconstruction, alteration, or repair of furnace, boiler furnace, stack, or other apparatus, that there will not under reasonable conditions of operation be produced or emitted from the stack connected therewith such smoke as is herein prohibited, the decision of the smoke abatement engineer, department of smoke regulation, shall be reversed and the finding of the advisory board shall be binding upon the smoke abatement engineer, department of smoke regulation; otherwise the same shall be confirmed. In which latter case the fees of the advisory board are to be paid by appellant, who shall first give bond or make other deposit of funds for the amount of fees provided for in article 1 of this ordinance.

ARTICLE 4A

No person or corporation shall use or cause to be used any new or remodeled or reconstructed plant or apparatus connected with a stack, including portable apparatus, for the production of heat and or power, unless he or it shall make application in writing to the department of smoke regulation on the form furnished by said department for a certificate to operate such plant or apparatus.

ARTICLE 5

It shall be unlawful for any engineer, contractor, or other person or corporation to do the work of the constructing, installing, reconstructing, altering, or repairing any furnace, boiler furnace, stack, or other fuel-burning apparatus connected with stack, unless the person or corporation for whom such construction, installation, reconstruction, alteration, or repair is being made has proper authority, in the form of a permit from the department of smoke regulation, for such work.

ARTICLE 5A

It shall be unlawful for any person or corporation to use or cause to be used any new or remodeled or reconstructed plant or apparatus connected with a stack, including portable apparatus, for the production of heat and/or power, unless the person or corporation shall have proper authority, in the form of a certificate from the department of smoke regulation, for operating such plant or apparatus.

ARTICLE 6

For examination of an application for a permit and/or certificate for any such construction, installation, reconstruction, alteration or repair, or for operation of such plant or apparatus, the department of smoke regulation shall collect at the time of issuing such permit, for the use of the county a fee or fees as fixed from time to time by the advisory board, for each unit of fuel-burning apparatus.

The issue and delivery by the department of smoke regulation of any such permit and/or certificate shall not be held to exempt the person or corporation to whom the permit and/or certificate has been issued or delivered or who is in possession of the same, or whose application has been approved, from prosecution on account of the production or emission of smoke hereby prohibited.

ARTICLE 7

The smoke abatement engineer, department of smoke regulation, shall keep in the office of the department of smoke regulation all applications made, and a complete record thereof as well as of all permits and/or certificates issued. He shall keep a record of all smoke observations on all stacks and generally of the work done by the department of smoke regulation. All such records shall be open for inspection by the public at all reasonable times.

ARTICLE 8

The smoke abatement engineer, department of smoke regulation, his deputies and inspectors shall have the right to enter in the performance of their duties at all reasonable hours all premises from which smoke is being emitted or has been emitted, and any person who shall, after proper identification, deny admittance to such person or persons or interfere with him or them in the performance of his or their duties shall be liable to a fine not exceeding \$50 or undergo an imprisonment in the county jail or workhouse of not more than 30 days, or both, at the discretion of the committing magistrate.

ARTICLE 9

If any person or corporation shall violate any one or more of the prohibitions or requirements of this ordinance, the smoke abatement engineer or deputy smoke abatement engineer or smoke inspector of the department of smoke regulation, shall enter suit before any police magistrate of the county of Hudson and upon conviction such person or corporation shall be subject to a fine or penalty not exceeding \$50 for each and every violation thereof, and each day's violation shall constitute a separate offense; or undergo an imprisonment in the county jail or workhouse of not more than 30 days or both at the discretion of the committing magistrate.

ARTICLE 10

The smoke abatement engineer, department of smoke regulation, is hereby empowered, with the consent and advice of the advisory board, to prepare and promulgate, from time to time, rules and regulations governing setting heights and setting methods of boilers, furnaces, and stokers, sizes and construction methods of flues, breechings, chimneys, and stacks, sizes and types of furnaces, stokers, boilers, and other fuel-burning equipment, grate areas, use, size, number, and type of steam-air jets, or other smoke eliminating devices, as determined by the kind of fuel to be used. Any other rules and regulations which may be deemed necessary from time to time may be added to or incorporated in the rules already published.

ARTICLE 11

Each member of the department of smoke regulation is hereby appointed a health inspector of the board of health and vital statistics of Hudson County.

ARTICLE 12

Any ordinance or part of ordinance conflicting with the provisions of this ordinance shall be, and the same is, hereby repealed, so far as the same affects this ordinance.

By order of the board of chosen freeholders,

DISTRICT OF COLUMBIA HEALTH DEPARTMENT

AN ACT FOR THE PREVENTION OF SMOKE IN THE DISTRICT OF COLUMBIA, AND FOR OTHER PURPOSES

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled. That on and after six months from the passage of this Act the emission of dense or thick black or gray smoke or cinders from any smokestack or chimney used in connection with any stationary engine, steam boiler, or furnace of any description within the District of Columbia shall be deemed, and is hereby declared, to be a public nuisance: *Provided*, That nothing in this Act shall be construed as applied to chimneys of buildings used exclusively for private residences.

SEC. 2. That the owner, agent, lessee, or occupant of any building of any description, from the smokestack or chimneys of which there shall issue or be emitted thick or dense black or gray smoke or cinders within the District of Columbia on or after the day above named shall be deemed and held guilty of creating a public nuisance and of violating the provisions of this Act.

SEC. 3. That any person or persons violating the provisions of this Act shall, upon conviction thereof before the police court of the District of Columbia, be punished by a fine of not less than \$10 nor more than \$100 for each and every offense; and each and every day wherein the provisions of this Act shall be violated shall constitute a separate offense.

SEC. 4. That in order to provide for the enforcement of the provisions of this Act there shall be detailed from time to time by the Commissioners of the District of Columbia an inspector or inspectors of the health department of the District of Columbia, whose duty it shall be, under the supervision of the health officer of the District of Columbia, to cause to be prosecuted all persons violating the provisions of this Act.

SEC. 5. That no discrimination shall be made against any method or device which may be used for the prevention of smoke and which accomplishes the purpose of this Act.

SEC. 6. That all acts or parts of acts inconsistent herewith be, and the same are hereby, repealed.

Approved February 2, 1899.

DEPARTMENT OF SMOKE REGULATION, RULES AND REGULATIONS, BOARD OF HEALTH AND VITAL STATISTICS, COUNTY OF HUDSON, N. J.

GOVERNING DETAILS OF FUEL-BURNING EQUIPMENT REQUIRED FOR ISSUANCE OF PERMITS AND CERTIFICATES. OCTOBER 1933

Advisory board.—Chairman, Dr. Harvey N. Davis, president Stevens Institute of Technology; Roy V. Wright, managing editor Railway Age, editor Railway Mechanical Engineering, past president American Society of Mechanical Engineers; Prof. Joseph H. Keenan, chairman department of mechanical engineering, Stevens Institute of Technology.

FOREWORD

In January 1931 the board of health and vital statistics of Hudson County adopted a smoke ordinance and established a department of smoke regulation.

By article 10 of the Hudson County smoke ordinance, the smoke abatement engineer, department of smoke regulation, is empowered, with the consent and advice of the advisory board, to prepare and promulgate rules and regulations covering details of fuel-burning equipment which will be required for issuance of permits and certificates. These rules and regulations are intended to be a guide to architects, engineers, contractors, equipment manufacturers, and building and plant owners. They incorporate the requirements of the department of smoke regulation covering the issuance of permits and certificates for all construction, reconstruction, alteration, and repair work involving any fuel-burning apparatus.

The object of these rules and regulations is to insure construction of new plants and buildings and changes in existing plants being done in such a manner that smoke will not be made. The residents of Hudson County are determined that smoke in the county be eliminated. If existing plants had been built according to these regulations, there would be much less smoke in our

atmosphere today. The department of smoke regulation, in issuing these rules and regulations, will prevent the construction of future sources of smoke and thus prevent an increase in the list of plants and buildings now smoking because of improperly constructed fuel-burning equipment. We appeal for the hearty cooperation of all those interested.

RULES AND REGULATIONS

A. POWER BOILERS

1. Power boilers shall be construed to mean all boilers carrying 15 pounds or more steam pressure.

Unless otherwise specifically mentioned, horsepower shall be construed to mean rated boiler horsepower and shall be figured as being equal to square feet of heating surface divided by 10.

Heating surface shall be construed to mean all boiler surfaces in contact with hot gases.

2. Each power boiler having more than 120 square feet of heating surface shall be equipped with a mechanical underfeed or chain-grate stoker, apparatus to burn pulverized coal, oil burner, or gas burner, which, in any case, shall be approved by the department of smoke regulation.

3. Mechanical chain-grate stokers shall have an ignition arch with a minimum length equal to three-fifths of the length of active grate. Each such stoker shall be provided with over-fire air with a minimum static pressure of 12 inches of water at the nozzle. Each such stoker, together with location and number of nozzles, shall be approved by the department of smoke regulation.

Minimum furnace heights of power boilers equipped with mechanical chain-grate stokers, to be operated at ratings of 150 percent or less, shall be preferred minimum furnace heights recommended by the Stoker Manufacturers Association, revised and amended to date. For power boilers equipped with mechanical chain-grate stokers, to be operated at more than 150 percent rating, special ruling shall be obtained from the department of smoke regulation.

4. Mechanical underfeed stokers shall have minimum furnace heights as follows:

Horsepower	Under 18	18 to 50	51 to 80	81 to 100	101 to 125	126 to 150	151 to 175	176 to 200
	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>
Pacific boilers.....	36	42	48	54	60	66	72	-----
Firebox boilers.....	48	54	60	66	72	78	84	-----
Horizontal-return tubular boilers.....	42	48	54	60	66	72	72	72

Pacific: Load limit, 125 percent of rating.

Firebox: Load limit, 125 percent of rating.

Horizontal-return tubular: Load limit, 150 percent of rating.

NOTE.—Down-draft boilers must have all water grates removed.

These dimensions are from the top of the stoker retort to the crown sheet of the boiler and are for single retort stokers.

All above figures are considered to be minimum dimensions and should be increased wherever the boiler is to carry an overload or has peak-load conditions to be met.

The minimum furnace heights of all horizontal return tubular and internally fired (firebox) boilers larger than those listed above, equipped with mechanical underfeed stokers, to be operated at 150-percent rating or less, shall be the preferred minimum furnace heights recommended by the Stoker Manufacturers' Association, revised and amended to date.

The minimum furnace heights of all other types of power boilers equipped with mechanical underfeed stokers, to be operated at 150-percent rating or less, shall be the preferred minimum furnace heights recommended by the Stokers Manufacturers' Association, revised and amended to date.

For power boilers equipped with mechanical underfeed stokers, to be operated at more than 150-percent rating, special ruling shall be obtained from the department of smoke regulation. Design of all mechanical underfeed-stoker installations shall be submitted to the department of smoke regulation for approval.

5. When pulverized coal is to be used as fuel, the required combustion space for all power boilers having a maximum rating of 500 horsepower or less, and having refractory walls, shall be determined on the basis of a maximum heat

liberation of 20,000 British thermal units per cubic foot of combustion space per hour. For larger boilers and for other types of walls, complete details of design shall be submitted. An acceptable method of collecting fly ash from the stacks or breechings of all pulverized-coal plants shall be provided. Design of all pulverized-coal installations shall be submitted to the department of smoke regulation for approval.

6. When oil is to be used as fuel, the required combustion space for all power boilers having a maximum rating of 500 horsepower or less, and having refractory walls, shall be determined on the basis of a maximum heat liberation of 30,000 British thermal units per cubic foot of combustion space per hour. For larger boilers and for other types of walls, complete details of design shall be submitted and special ruling obtained from the department of smoke regulation.

All oil burners installed shall be approved by the National Board of Fire Underwriters to burn the grade of oil which will be used. Design of all oil-burner installations shall be submitted to the department of smoke regulation for approval.

7. All vertical fire-tube boilers shall use only coke or anthracite coal as fuel, unless such boilers are equipped with oil burners or gas burners.

8. If steam-air jets are used in an existing power boiler, there shall be one such jet for each 300 to 500 square feet of heating surface or fraction thereof, and the minimum number of steam-air jets shall be three. Location and construction of such jets shall be approved by the department of smoke regulation.

9. All power boilers having more than 12 horsepower capacity shall have a stack of sufficient height or shall have induced draft fan to give a minimum draft of 0.20 inches of water over the fire in the furnace under normal working conditions.

10. Size and height of stack for power boilers shall be determined by a modern chimney formula. For each right angle bend in the breeching or smoke pipe, 10 feet shall be added to the height of the stack so determined.

No stack shall be less than 55 feet in height above the ground line.

The top of any stack shall extend above or be far enough away from any nearby building to avoid down drafts.

11. The inside walls of each stack shall be gas tight, vertical, free from offsets, constrictions, or enlargements, and shall have no openings except the breeching from boiler or boilers and a clean-out opening with tightly fitted door or cap. All breechings shall be provided with sufficient clean-out openings, with tightly fitted doors, so that all parts of breechings may be properly cleaned.

12. All fuel-burning plants shall be equipped with smoke indicators or similar devices approved by the department of smoke regulation, to enable the operating crew to observe smoke conditions from the boiler room and/or furnace room at all times. This provision shall apply to all existing boilers having more than 250 square feet of heating surface, when new oil burners or mechanical stokers are installed.

13. Each boiler room and/or furnace room shall have an opening or openings to the external air, properly louvred, with an area equal to at least three-fourths of the area of stack.

B. PORTABLE BOILERS AND MISCELLANEOUS PORTABLE EQUIPMENT

14. All existing portable boilers (except locomotives) shall use only coke as fuel, unless such boilers are equipped with smoke-preventing devices approved by the department of smoke regulation.

15. The department of smoke regulation shall have authority to attach identification tags to all portable boilers, power shovels, road rollers, hoists, derricks, pile drivers, tar kettles, asphalt kettles, and any other portable equipment capable of emitting smoke. After January 1, 1932, no person or corporation shall operate equipment of the above-mentioned type in Hudson County unless he or it shall first obtain a certificate to operate from the department of smoke regulation.

16. No tar kettles or asphalt kettles shall be used with an open fire. All tar kettles and asphalt kettles shall burn coke or shall be equipped with oil burners approved by the department of smoke regulation.

17. After July 1, 1932, no certificate to operate will be issued by the department of smoke regulation covering operation of new power shovels, road rollers, hoists, derricks, pile drivers, and similar portable equipment designed so that it is necessary to burn fuel in a boiler. All new equipment of types mentioned after July 1, 1932, shall be of internal combustion engine type or shall be electrically driven.

C. HEATING BOILERS

18. Heating boilers shall be construed to mean all boilers carrying not in excess of 15 pounds per square inch steam or 30 pounds per square inch water pressure.

"Net load" shall be construed to mean all radiation used for heating purposes (exclusive of piping) and reduced to the equivalent of direct cast-iron radiators in a temperature of 70 degrees Fahrenheit, which for this purpose should be calculated on a basis of (steam) 240 British thermal units per square foot per hour, (water) 150 British thermal units per square foot per hour.

Any generator, coil in firebox, indirect heater, or other device attached to boiler, used for heating water for domestic purposes, shall be included in net load and shall be calculated in equivalent direct radiation in accordance with the rules of the Heating and Piping Contractors National Association as shown in their net-load recommendations manual.

The net load capacity of heating boilers shall be the net load recommendations of the Heating and Piping Contractors National Association, revised and amended to date.

Or, where test data are available, the net load capacity may be obtained on the basis of actual test of each type and size boiler manufactured. Each such test shall be reported as a maximum output rating in B. t. u.'s or in square feet of radiation (steam 240 B. t. u.'s per square foot per hour, water 150 B. t. u.'s per square foot per hour). Such tests shall be made for the manufacturer in accordance with the Code of the American Society of Heating and Ventilating Engineers, revised and amended to date, on an 8-hour firing period, by a disinterested party acceptable to the advisory board. Tests at other firing periods may be reduced to an 8-hour basis by inverse proportionality if the advisory board approves. The maximum outputs thus obtained shall be multiplied by the appropriate one of the following factors to obtain allowable net-load capacity or its equivalent:

(a) Gas	0.68
(b) Coke	.68
(c) Anthracite	.68
(d) Oil	.64
(e) Bituminous	.58

Factors for other fuels not commonly used in Hudson County shall be specially determined by the Department of Smoke Regulation.

19. Each heating boiler rated at more than 1,200 square feet of steam radiation, or rated at more than 1,800 square feet of water radiation, shall be equipped with a mechanical underfeed stoker, oil burner, or gas burner approved by the department of smoke regulation, unless owner of building and/or plant signs an affidavit that only coke or anthracite coal will be used as fuel.

20. When oil is to be used as fuel, the required combustion space for all heating boilers shall be determined on the basis of a maximum heat liberation of 25,000 B. t. u.'s per cubic foot of combustion space per hour.

All oil burners shall be approved by the National Board of Fire Underwriters to burn the grade of oil which will be used. Design of all oil-burner installations shall be submitted to the department of smoke regulation for approval.

21. Mechanical underfeed stokers shall have minimum furnace heights as follows:

Net rating square feet of steam radiation	Under 2,500	2,500 to 6,999	7,000 to 10,999	11,000 to 13,999	14,000 to 17,499	17,500 to 20,000	20,001 to 25,000	
Horsepower	Under 18	18 to 50	51 to 80	81 to 100	101 to 125	126 to 150	151 to 175	176 to 200
	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches
Pacific	36	42	48	54	60	66	72	
Firebox	48	54	60	66	72	78	84	
Horizontal return tubular		42	48	54	60	66	72	72
Cast iron	36	42	48	54				

Pacific: Load limit, 125 percent of rating.

Firebox: Load limit, 125 percent of rating.

Horizontal return tubular: Load limit, 150 percent of rating.

NOTE.—Down-draft boilers must have all water grates removed.

NOTE.—All the dimensions given above are taken from the top of the stoker retort to the crown sheet of the boiler (in case of steel boilers) and are for single retort stokers.

In the case of cast-iron boilers, all dimensions given above are taken from the top of the stoker retort to the nearest heating surface of the boiler not in a vertical plane.

22. Heating boilers rated at 1,200 square feet or less of steam radiation, or at 1,800 square feet or less of water radiation, shall burn coke or anthracite coal or shall be equipped with mechanical underfeed stoker, oil burner, or gas burner, approved by the department of smoke regulation.

23. All heating plants having boilers rated at more than 1,200 square feet of steam radiation, or at more than 1,800 square feet of water radiation, shall have a stack of sufficient height to give a minimum draft of 0.15 inches of water over the fire in the furnace under normal working conditions.

24. All stacks for heating plants shall conform to the following minimum requirements as to size and height:

Net boiler rating, square foot of steam radiation	Inside dimensions	Height above grade	Standard flue lining
	<i>Inches</i>	<i>Feet</i>	<i>Inches</i>
200 or less.....	8 x 8	35	8½ x 8½
210 to 300.....	8 x 12	35	8½ x 13
310 to 500.....	12 x 12	35	13 x 13
510 to 650.....	12 x 12	40	13 x 13
660 to 800.....	12 x 16	40	13 x 18
810 to 950.....	12 x 16	45	13 x 18
960 to 1,100.....	16 x 16	45	18 x 18
1,100 to 1,200.....	16 x 16	50	18 x 18
1,310 to 1,650.....	16 x 16	55	18 x 18
1,660 to 2,200.....	16 x 20	55	20 x 24
2,210 to 2,500.....	20 x 20	60	24 x 24
2,510 to 3,000.....	20 x 20	65	24 x 24
3,010 to 3,500.....	20 x 24	65	
3,510 to 4,000.....	24 x 24	65	
4,010 to 4,500.....	24 x 24	70	
4,510 to 5,000.....	24 x 28	75	
5,010 to 5,500.....	28 x 28	80	
5,510 to 6,000.....	30 x 30	80	
6,010 to 6,500.....	32 x 32	85	
6,510 to 7,000.....	34 x 34	90	
7,010 to 7,500.....	34 x 36	90	
7,510 to 8,000.....	36 x 36	90	
8,010 to 9,000.....	36 x 36	100	
9,010 to 10,000.....	38 x 38	100	
10,100 to 11,000.....	40 x 40	100	
11,100 to 12,000.....	42 x 42	100	
12,100 to 13,000.....	42 x 42	110	
13,100 to 14,000.....	44 x 44	110	
14,100 to 15,000.....	46 x 46	110	
15,100 to 16,000.....	46 x 46	120	
16,100 to 17,000.....	48 x 48	120	
17,100 to 18,000.....	48 x 50	120	
18,100 to 19,000.....	50 x 50	120	
19,100 to 20,000.....	50 x 50	130	
20,100 to 22,500.....	52 x 52	130	
22,600 to 25,000.....	54 x 54	130	

NOTE.—For water radiation, add 50 percent to net boiler ratings in above table.

The above table is prepared as a guide for architects and engineers to determine the proper sizes of stacks. Stack sizes are inside dimensions and plans should be so marked.

For each right-angle bend in breeching or smoke pipe, 10 feet shall be added to height given in above table.

25. The inside walls of each stack shall be smoke tight, vertical, free from offsets, constrictions, or enlargements, and shall have no openings except the breeching or smoke pipe from boiler, and a clean-out opening with tightly fitted door or cap.

The top of any stack shall extend above or be far enough away from any nearby building to avoid down drafts.

No stack shall be less than 35 feet high above the ground line.

The department of smoke regulation reserves the right to make a smoke test on any stack.

26. No breeching or smoke pipe shall have a horizontal run of more than 20 feet and in no case shall this run drop below the horizontal. All breechings or smoke pipes shall be provided with sufficient clean-out openings, with tightly fitted doors, so that all parts of breechings or smoke pipes may be properly cleaned.

27. All fuel-burning plants, having boilers with net rating of more than 3,000 square feet of steam radiation, shall be equipped with smoke indicators or similar devices approved by the department of smoke regulation to enable the operating crew to observe smoke conditions from the boiler room and/or furnace room at all times. This provision shall apply to all existing boilers when new oil burners or mechanical stokers are installed.

28. Each boiler room and/or furnace room shall have an opening or openings to the external air, properly louvred, with an area equal to at least three-fourths of the area of stack.

D. WARM-AIR FURNACES

29. Each warm-air furnace having 7 square feet or more of grate surface shall be equipped with mechanical underfeed stoker, oil burner, or gas burner, approved by the department of smoke regulation, unless owner of building and/or plant signs an affidavit that only coke or anthracite coal will be used as fuel.

30. Each warm-air furnace having less than 7 square feet of grate surface shall burn coke or anthracite coal or shall be equipped with mechanical underfeed stoker, oil burner, or gas burner approved by the department of smoke regulation.

31. All heating plants having warm-air furnaces with a total of 7 square feet or more of grate surface shall have a stack of sufficient height to give a minimum draft of 0.15 inch of water over the fire in the furnace under normal working conditions.

E. INCINERATORS

32. Each incinerator shall have a separate stack.

33. The design and dimensions of incinerators shall be submitted to the department of smoke regulation for approval.

34. Each incinerator shall be equipped with an apparatus capable of furnishing auxiliary draft heat to the incinerator, which apparatus shall be approved by the department of smoke regulation.

F. WATER HEATERS

35. All water heaters shall burn coke or anthracite coal or shall be equipped with gas burners or oil burners.

36. When a heating boiler is equipped with an underfeed stoker for burning bituminous coal and a coal fired water heater is used, a separate coal bin shall be provided so that coke or anthracite can be used in water heater.

G. LOCOMOTIVES

37. Rules and regulations covering locomotives will be issued at a later date.

H. FLOATING EQUIPMENT

38. Rules and regulations covering tugs, vessels, and all other floating equipment will be issued at a later date.

I. PROCESS FURNACES AND STILLs

39. A process furnace or still shall be defined as any furnace in an industrial plant, other than a boiler furnace, used in some process of manufacture.

40. Detailed description and drawings of any such furnaces, showing the purpose, design, dimensions, combustion space, amount and kind of fuel to be used, etc., shall be submitted to the department of smoke regulation for approval.

J. MISCELLANEOUS

41. Any person or corporation tearing down or wrecking any building or structure shall not burn tar paper, refuse, etc., in an open fire at the site.

42. No person or corporation shall burn any garbage, refuse, rubbish, or other combustible material in an open fire except on a dump duly approved by the Department of Smoke Regulation.

FEES FOR PERMITS

43. Air jets (see "Steam-Air Jets" (53)).

44. Bake ovens: According to grate surface or fuel consumption. (See "Furnaces (Other than Boiler Furnaces)" (48, 50, 51, and 52)).

45. Boilers (heating)

Net rating less than 750 square feet of steam radiation or less than 1,125 square feet of water radiation, each.....	\$1.00
Net rating 750 to 4,990 square feet, inclusive, of steam radiation, or 1,125 to 7,500 square feet, inclusive, of water radiation, each.....	2.00
Net rating of 5,000 to 25,000 square feet, inclusive, of steam radiation, each.....	4.00
Net rating over 25,000 square feet of steam radiation, each.....	8.00
Net rating less than 750 square feet of steam radiation or less than 1,125 square feet of water radiation, with integral gas burner, oil burner, or stoker, each.....	2.00
Net rating 750 to 4,990 square feet, inclusive, of steam radiation or 1,125 to 7,500 square feet, inclusive, of water radiation, with integral gas burner, oil burner, or stoker, each.....	4.00
Net rating of 5,000 to 25,000 square feet, inclusive, of steam radiation, with integral gas burner, oil burner, or stoker, each.....	6.00
(NOTE.—Where heating boilers include as an integral part of their manufacture a gas burner, oil burner, or stoker, there shall be charged only one fee for permit.)	

46. Boilers (power)

Less than 50 horsepower, each.....	\$2.00
50 to 250 horsepower, inclusive, each.....	4.00
251 to 500 horsepower, inclusive, each.....	8.00
501 to 1,000 horsepower, inclusive, each.....	12.00
Over 1,000 horsepower, each.....	20.00

47. Furnaces (warm air)

Fire pot, less than 30-inch diameter, each.....	1.00
Fire pot, 30-inch diameter or more, each.....	2.00

48. Furnaces (other than boiler furnaces)

Less than 11 square feet grate surface, or hourly fuel consumption less than 225 pounds coal, or 22 gallons oil, each.....	2.00
11 to 55 square feet grate surface, or 225 to 1,125 pounds-hour coal consumption, or 22 to 110 gallons-hour oil consumption, inclusive, each.....	4.00
56 to 110 square feet grate surface, or 1,126 to 2,250 pound-hours coal consumption, or 111 to 220 gallon-hours oil consumption, inclusive, each.....	8.00
111 to 220 square feet grate surface, or 2,251 to 4,500 pound-hours coal consumption, or 221 to 440 gallon-hours oil consumption, inclusive, each.....	12.00
Over 220 square feet grate surface, or 4,500 pound-hours coal consumption, or 440 gallon-hours oil consumption, each.....	20.00

49. Incinerators

(According to grate surface. See "Furnaces (other than boiler furnaces)" (48).)

50. *Mechanical stokers*

In heating boilers having net rating less than 750 square feet of steam radiation or less than 1,125 square feet of water radiation, or in warm-air furnaces having firepot less than 30 inches diameter, for each boiler or furnace-----	\$1.00
In heating boilers having net rating 750 square feet steam or 1,125 square feet water radiation, or more, or in warm-air furnaces having firepot 30 inches diameter or over, for each boiler or furnace-----	2.00
In power boilers rated less than 250 horsepower, for each boiler-----	2.00
In power boilers rated 250 to 1,000 horsepower, inclusive, for each boiler-----	4.00
In power boilers rated over 1,000 horsepower, for each boiler-----	8.00
In furnaces (other than boiler furnaces) having less than 1,125 pound-hours coal consumption, for each furnace-----	2.00
In furnaces (other than boiler furnaces) having 1,125 to 4,500 pound-hours coal consumption, inclusive, for each furnace-----	4.00
In furnaces (other than boiler furnaces) having over 4,500 pound-hours coal consumption, for each furnace-----	8.00

51. *Oil burners*

In heating boilers having net rating less than 750 square feet steam radiation or less than 1,125 square feet water radiation, or in warm-air furnaces having firepot less than 30 inches diameter, for each boiler or furnace-----	1.00
In heating boilers having net rating 750 square feet steam radiation, or 1,125 square feet water radiation, or more, or in warm-air furnaces having firepot 30 inches diameter or over, for each boiler or furnace-----	2.00
In power boiler rated less than 250 horsepower, for each boiler-----	2.50
In power boiler rated 250 to 1,000 horsepower, inclusive, for each boiler-----	4.00
In power boilers rated over 1,000 horsepower, for each boiler-----	8.00
In furnaces (other than boiler furnaces) having less than 110 gallon-hours oil consumption, for each furnace-----	2.00
In furnaces (other than boiler furnaces) having 110 to 440 gallon-hours oil consumption, inclusive, for each furnace-----	4.00
In furnaces (other than boiler furnaces) having over 440 gallon-hours oil consumption, for each furnace-----	8.00

52. *Pulverized coal burners*

In power or heating boilers rated less than 250 horsepower, for each boiler-----	2.00
In power boilers rated 250 to 1,000 horsepower, inclusive, for each boiler-----	4.00
In power boilers rated over 1,000 horsepower, for each boiler-----	8.00
In furnaces (other than boiler furnaces) having less than 1,125 pound-hours coal consumption, for each furnace-----	2.00
In furnaces (other than boiler furnaces) having 1,125 to 4,500 pound-hours coal consumption, for each furnace-----	4.00
In furnaces (other than boiler furnaces) having over 4,500 pound-hours coal consumption, for each furnace-----	8.00

53. *Steam-air jets*

In any size boiler or furnace, for each boiler or furnace-----	2.00
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54. *Water heaters*

Less than 155 gallons water, each-----	\$0.50
155 to 990 gallons water, inclusive, each-----	1.00
1,000 to 2,000 gallons water, inclusive, each-----	1.00
Over 2,000 gallons water, each-----	2.00

55. *NOTE*

A separate permit is required for each unit of fuel burning equipment. In case of heating boiler with integral gas burner, oil burner, or stoker, only one permit

is required for combined unit. In case of air jets or steam air jets, a separate permit is required for each boiler or furnace.

All fees covering permits and certificates for each installation are due and payable with application for permit.

If any plant for which permit is issued is not started within 1 year of date of permit, the permit shall be automatically canceled and all fees paid shall be forfeited.

FEES FOR CERTIFICATES

56. Air jets

(See "Steam-Air Jets" (66).)

57. Bake ovens

(According to grate surface or fuel consumption. See "Furnaces (other than boiler furnaces)" (61, 63, 64, and 65).)

58. Boilers (heating)

Net rating less than 750 square feet of steam radiation or less than 1,125 square feet of water radiation, each.....	\$2. 00
Net rating 750 to 4,990 square feet, inclusive, of steam radiation or 1,125 to 7,500 square feet, inclusive, of water radiation, each.....	3. 00
Net rating 5,000 to 25,000 square feet, inclusive, of steam radiation, each.....	6. 00
Net rating over 25,000 square feet of steam radiation, each.....	12. 00
Net rating less than 750 square feet of steam radiation or less than 1,125 square feet of water radiation, with integral gas burner, oil burner, or stoker, each.....	3. 00
Net rating 750 to 4,900 square feet, inclusive, of steam radiation, or 1,125 to 7,500 square feet, inclusive, of water radiation, with integral gas burner, oil burner, or stoker, each.....	5. 00
Net rating of 5,000 to 25,000 square feet, inclusive, of steam radiation, with integral gas burner, oil burner, or stoker, each.....	8. 00
(NOTE.—Where heating boilers include as an integral part of their manufacture a gas burner, oil burner, or stoker, there shall be charged only one fee for certificate.)	

59. Boilers (power)

Less than 50 horsepower, each.....	\$3. 00
50 to 250 horsepower, inclusive, each.....	6. 00
251 to 500 horsepower, inclusive, each.....	12. 00
501 to 1,000 horsepower, inclusive, each.....	18. 00
Over 1,000 horsepower each.....	30. 00

60. Furnaces (warm air)

Fire pot less than 30 inches diameter, each.....	2. 00
Fire pot 30 inches diameter or more, each.....	3. 00

61. Furnaces (other than boiler furnaces)

Less than 11 square feet grate surface, or hourly fuel consumption less than 225 pounds coal, or 22 gallons oil, each.....	3. 00
11 to 55 square feet grate surface, or 225 to 1,125 pounds-hour coal consumption, or 22 to 110 gallons-hour oil consumption, inclusive, each....	6. 00
56 to 110 square feet grate surface, or 1,126 to 2,250 pounds-hour coal consumption, or 111 to 220 gallons-hour oil consumption, inclusive, each....	12. 00
111 to 220 square feet grate surface, or 2,251 to 4,500 pounds-hour coal consumption, or 221 to 440 gallons-hour oil consumption, inclusive, each.....	18. 00
Over 220 square feet grate surface, or 4,500 pounds-hour coal consumption, or 440 gallons-hour oil consumption, each.....	30. 00

62. *Incinerators*

(According to grate surface. See "Furnaces (other than boiler furnaces)" (61).)

63. *Mechanical stokers*

In heating boilers having net rating less than 750 square feet steam radiation, or less than 1,125 square feet water radiation, or in warm-air furnaces having fire pot less than 30 inches diameter, for each boiler or furnace-----	2. 00
In heating boilers having net rating 750 square feet steam radiation, or 1,125 square feet water radiation or more, or in warm-air furnaces having fire pot 30 inches in diameter, or over, for each boiler or furnace-----	\$3. 00
In power boilers rated less than 250 horsepower, for each boiler-----	3. 00
In power boilers rated 250 to 1,000 horsepower, inclusive, for each boiler--	6. 00
In power boilers rated over 1,000 horsepower, for each boiler-----	12. 00
In furnaces (other than boiler furnaces) having less than 1,125 pounds-hour coal consumption, for each furnace-----	3. 00
In furnaces (other than boiler furnace) having 1,125 to 4,500 pounds-hour coal consumption, inclusive, for each furnace-----	6. 00
In furnaces (other than boiler furnaces) having over 4,500 pounds-hour coal consumption, for each furnace-----	12. 00
In water heaters, any size, for each heater-----	2. 00

64. *Oil burners*

In heating boilers having net rating less than 750 square feet steam radiation, or less than 1,125 square feet water radiation, or in warm-air furnaces having fire pot less than 30 inches in diameter, for each boiler or furnace-----	2. 00
In heating boilers having net rating 750 square feet steam radiation, or 1,125 square feet water radiation, or more, or in warm-air furnaces having fire pot 30 inches in diameter, or over, for each boiler or furnace-----	3. 00
In power boilers rated less than 250 horsepower, for each boiler-----	3. 00
In power boilers rated 250 to 1,000 horsepower, inclusive, for each boiler--	6. 00
In power boilers rated over 1,000 horsepower, for each boiler-----	12. 00
In furnaces (other than boiler furnaces) having less than 110 gallons-hour oil consumption, for each furnace-----	3. 00
In furnaces (other than boiler furnaces) having 110 to 440 gallons-hour oil consumption, inclusive, for each furnace-----	6. 00
In furnaces (other than boiler furnaces) having over 440 gallons-hour oil consumption, for each furnace-----	12. 00
In water heaters, any size, for each heater-----	2. 00

65. *Pulverized coal burners*

In power or heating boilers rated less than 250 horsepower, for each boiler-----	3. 00
In power boilers rated 250 to 1,000 horsepower, inclusive, for each boiler-----	6. 00
In power boilers rated over 1,000 horsepower, for each boiler-----	12. 00
In furnaces (other than boiler furnaces) having less than 1,125 pounds-hour coal consumption, for each furnace-----	3. 00
In furnaces (other than boiler furnaces) having 1,125 to 4,500 pounds-hour coal consumption, for each furnace-----	6. 00
In furnaces (other than boiler furnaces) having over 4,500 pounds-hour coal consumption, for each furnace-----	12. 00

66. *Steam-air jets*

In any size boilers or furnaces, for each boiler or furnace-----	3. 00
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67. *Water heaters*

Less than 155 gallons water, each-----	0. 50
155 to 990 gallons water, inclusive, each-----	1. 00
1,000 to 2,000 gallons water, inclusive, each-----	2. 00
Over 2,000 gallons water, each-----	3. 00

68. NOTE

A separate certificate is required for each unit of fuel-burning equipment. In case of heating boiler with integral gas burner, oil burner, or stoker, only one certificate is required for combined unit. In case of air jets or steam-air jets, a separate certificate is required for each boiler or furnace.

All fees covering permits and certificates for each installation are due and payable with application for permit.

If any plant for which permit is issued is not started within 1 year of date of permit, the permit shall be automatically canceled and all fees paid shall be forfeited.

WOMEN'S CITY CLUB.

Washington, D. C., March 19, 1935.

The Honorable MARY T. NORTON,

Chairman Committee on the District of Columbia,

House of Representatives, Washington, D. C.

DEAR MADAM: The following resolution was adopted at a meeting of the Women's City Club on March 6:

Resolved, That the Women's City Club, in business meeting assembled on March 6, 1935, endorses H. R. 6232, a bill to prevent the fouling of the atmosphere in the District of Columbia by smoke and other foreign substances, and for other purposes.

Very truly yours,

JEAN BENNETT, *President.*

WASHINGTON, February 12, 1935.

Hon. M. T. NORTON,

Chairman Committee on the District of Columbia,

House of Representatives, Washington, D. C.

DEAR MADAM: I most respectfully beg leave to invite your attention to some facts in reference to the District of Columbia. You are very likely aware of the fact that a number of people of the District of Columbia have complained or requested the District of Columbia Commissioners to find a remedy for an intolerable smoke nuisance in the city, because of a large number of people in the city of Washington are using soft coal instead of hard coal because of the difference in the price. The existing law refers only to big buildings, as hotels, apartment houses, which reach a height considerably above the private residences and therefore the smoke from those buildings does not effect the residences below very much. The smoke and soot from soft coal used in private residences blows all over the neighborhood and it is almost impossible to open any doors or windows in such neighborhood on account of the smoke nuisance. I requested the health department for information on this very subject; the answer I received is in the enclosed printed form showing that the only smoke law for the District of Columbia was enacted by Congress on February 2, 1899, which can be now considered worthless or outlawed. This old law surely needs an amendment very bad after 35 years, as conditions in a good many ways have changed a great deal in that time.

Dear Madam, hoping the above will receive honest, due, and favorable consideration and action by Congress.

I am, most respectfully,

JOHN M. MOHL.

WASHINGTON, D. C., March 7, 1935.

Hon. MARY T. NORTON,

DEAR MADAM: You are the only person to whom we may appeal, and not wishing to use your valuable time I am enclosing two clippings from the Evening Star, which I hope will explain my motive in writing to you.

The smoke nuisance in this section is terrible to the residents, to say nothing of the damage to the Government buildings.

The nuisance is with us right now and the supervision of newly installed plants will not be effective until ruin is complete. Besides, it is the concensus of opinion that the District Commissioners have about all that they can do now.

Pardon me for this plea, but a plea it is. You alone can help us and maintain the beauty of the National Capital.

Yours very respectfully,

W. P. SWEET.

McKENNEY, FLANNERY & CRAIGHILL,
Washington, D. C., March 9, 1935.

Hon. MARY T. NORTON,

Chairman Committee on the District of Columbia,

House of Representatives, Washington, D. C.

DEAR CONGRESSWOMAN: On behalf of various railroad companies operating in and through the District of Columbia, we have the honor as well as the very agreeable duty, to advise the membership of your committee of the interest of said companies in H. R. 6232 (S. 2034 identic). "To prevent the fouling of the atmosphere in the District of Columbia by smoke and other foreign substances", etc., and to request that full opportunity be afforded at the committee's convenience, for the presentation of such companies' views and suggestions concerning the matter.

Very respectfully yours,

McKENNEY, FLANNERY & CRAIGHILL,
By F. D. McKENNEY,

*Attorneys for various steam railroad companies operating
in the District of Columbia.*

MERCHANTS & MANUFACTURERS ASSOCIATION, INC.,
Washington, D. C., March 4, 1935.

Hon. MARY T. NORTON,

Chairman House District Committee,

House of Representatives, Washington, D. C.

MY DEAR MRS. NORTON: At a recent meeting of the board of governors of this association, the smoke bill drafted by Peoples' Counsel Roberts and which has recently been introduced into Congress, was considered. The board was unanimously of the opinion that action on this bill should be deferred pending the completion of the draft of the bill which is being prepared by a committee, of which Captain Clark is chairman, appointed sometime ago by the Commissioners to prepare a new smoke ordinance for the District of Columbia.

It is our understanding that this committee has devoted much time and effort in studying the smoke ordinances of other cities and the model ordinance prepared by the Bureau of Standards, and has drafted a bill which embodies the good points of these various ordinances.

It is the opinion of the board of governors of this association that no action should be taken on the bill prepared by Mr. Roberts until the bill prepared by the Clark committee can be considered by the Commissioners and the various organizations affected be given an opportunity to study and express their opinion of the same.

Yours very truly,

EDWARD D. SEAW, *Secretary.*

COLUMBIA HEIGHTS CITIZENS' ASSOCIATION,
Washington, D. C., February 13, 1935.

Hon. VIRGINIA E. JENCKES,

House Committee District of Columbia.

DEAR MRS. JENCKES: I am forwarding you a copy of a resolution which was passed unanimously by our organization at our last meeting with the hope that you will give this matter your personal attention.

Those of us with homes up here on the Heights look out daily at vast columns of black smoke rolling over the city and believe that drastic action is necessary to preserve the beauty of our buildings and the health of our people.

With kindest regards, I am,

Very sincerely,

W. I. SWANTON, *Secretary.*

Whereas, prior to the World War, residents of the District of Columbia were not permitted to burn soft coal; and

Whereas the Columbia Heights Citizens' Association has passed numerous resolutions and continuously urged the District Commissioners to take action against the smoke nuisance which has grown to such proportions that our city looks like a little Pittsburgh; and

Whereas our Government has spent and will continue to spend millions of dollars on Federal buildings which all too soon will be ruined with grime and smoke from low-grade oil burners and soft coal; and

Whereas thousands of dollars must necessarily be spent from time to time to cleanse said building; and

Whereas the health of our citizens is also endangered through breathing this smoke-laden air; and

Whereas enforcement of the smoke law under existing regulations has proved a dire failure: Now, therefore, be it

Resolved, That the Columbia Heights Citizens' Association once more go on record as unalterably opposed to the burning of soft coal and low-grade oil in the District of Columbia; and be it further

Resolved, That we sponsor a bill to obtain a municipally owned hydroelectric plant which will supply current at an estimated cost of about 6 mills per kilowatt-hour to heat and light the Capital of our Nation and give the citizens a beautifully clean city; and be it further

Resolved, That a copy of this resolution be transmitted to the President of the United States, the chairmen of the Senate and House District Committees, the District Commissioners, and the press.

(Introduced by request of the president, February 5, 1935, and passed unanimously with applause.)

W. I. SWANTON, *Secretary*.

(Thereupon, the subcommittee adjourned to meet Tuesday, Apr. 16, 1935, at 10 a. m.)

SMOKE CONTROL

THURSDAY, APRIL 16, 1935

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON PUBLIC HEALTH, HOSPITALS, AND CHARITIES OF THE COMMITTEE ON THE DISTRICT OF COLUMBIA,
Washington, D. C.

The hearing on the above-entitled bill was resumed at 10 a. m., Hon. Virginia E. Jenckes presiding.

Mrs. JENCKES. The subcommittee will be in order.

This morning we are to continue the hearings on the smoke-nuisance bills, and the first witness that we will hear is Mr. O. P. Hood, of the United States Bureau of Mines.

Mr. Hood.

**STATEMENT OF O. P. HOOD, CHIEF TECHNOLOGIC BRANCH,
UNITED STATES BUREAU OF MINES; ALSO CHIEF MECHANICAL
DIVISION**

Mr. Hood. My name is O. P. Hood, and I am Chief of the Technologic Branch of the United States Bureau of Mines, and also Chief of the Mechanical Division.

Perhaps I should explain how the Bureau of Mines comes to be interested in smoke abatement.

Many years ago an organic act was passed establishing the Bureau of Mines, in which it was stated that the Bureau of Mines should interest itself in fuels and in the economical use of fuels.

When you begin to use a fuel, and use it uneconomically, you get smoke. If fuel is used properly, you get no smoke.

The approach of the Bureau of Mines is purely from a scientific point of view. To what extent is it possible to burn the ordinary fuels and burn them smokelessly?

The Bureau of Mines has considerable literature on the fundamentals of combustion, and it is that approach that the Bureau of Mines has to this problem. It is not local; it has been national.

We have interested ourselves in all of the fuels that are available for domestic or industrial use.

This particular thing that I have written was simply a letter of advice as to the present situation in regard to smoke abatement. What is it we know? What is it we do not know? What do we guess at? What do we wish we had?

It is necessary to begin with definitions. A generation ago "smoke" was the visible output from a stack discharging products of combustion. It was usually described as some shade of black, light or dark, or dense, or only haze. Complaints were largely against "dense black smoke", and "smoke abatement" meant the

elimination of such smoke except for short periods of time, when smoking was considered to be inevitable.

At the present time the term "smoke" has a much more comprehensive meaning. It is being used to cover all undesirable material coming from a stack delivering products of combustion into the atmosphere. In addition to the visible smoke of all shades, it includes the almost invisible ash and totally invisible harmful gas. In any discussion of the subject of "smoke abatement" it must be made clear just what is meant by smoke.

The word "abate" or to beat down, means to "totally eliminate", but it also has the meaning "to lessen." This double meaning creates confusion of thought, so that an understanding must be reached as to what is meant by "abatement."

No spot has ever been found at the surface of the earth where the air is dust free. The sky is said to be blue because of the finely divided matter of some sort that affects the light passing through. The definition of "pure air" or the objectives of "smoke abatement" requires that the threshold of quantities beyond which the air shall be considered impure shall be defined technically. The human mechanism is adapted to use somewhat impure respirable fluid without injury or annoyance. Shall the determination of the amount of allowable impurity be determined by some technically defined limit beyond which damage is done to the person or to property, or shall we rest content with the simple statement "we do not like it" and arbitrarily declare it to be a nuisance? The technical man demands a technical definition in order that industries may conform to the community desire. At the present time there are practically no definitions that are technically sound or acceptable. In the present state of the art the medical profession does not furnish a clear definition of what constitutes a harmful atmosphere except in regard to very few things. For instance, the limit of allowable carbon monoxide in the air is pretty definitely determined.

Before threshold limits can be defined the objectionable characteristics of quantities involved must be known. There is no unanimity of opinion on this matter and much remains to be learned. For instance, silica dust is blamed for the lung disease called silicosis. It was at first believed that the sharp edges of the dust particles mechanically irritated the tissue. Later it was the belief that solubility of the free silica was the undesirable factor and there are now proponents of a theory that something else than silica is the main factor. That dust of any kind seriously reduces the amount of ultra-violet light reaching the human being is now held to be an offending characteristic. What then about silica dust should we measure? It is necessary to know what to measure and how to measure it regarding each deleterious material in air before definitions can be made.

This is the field of research and research requires long-time constant support. Temporary emergency effort over short periods cannot help much, but it is in this field of research that the greatest good for smoke abatement can be accomplished since definitions are necessary before a rational treatment of the subject can be made.

It may be that it is sufficient for the present to fall back upon a less rational basis of definition. It may be enough to simply say "we don't like it" and recognize the intuitive feeling as Nature's way of

self-protection. For the lack of a better basis at present we are compelled to recognize such an arbitrary basis for definition, so that we define "smoke" as something accompanying combustion that the community does not like and define "abatement" as the reduction of the amounts involved to the point where the community will accept it. The ideals of "pure air" are continually changing, they vary in different communities and with the dominance of industry. Sometimes a community accepts what it must. Usually if there is no visible output from a stack the community raises no objection.

There are a few fuels, such as anthracite, coke, and gas, that can be easily burned with no visible smoke. Anthracite and coke may, however, deliver considerable ash in the air, and gas can be made to smoke. It is probably true that generally clean air cannot be had until some form of relatively smokeless fuel shall be universally available. Experience with anthracite indicates that the characteristic of smokelessness is not sufficient to guarantee universal use. Each fuel has limitations peculiar to itself. Even at the same price anthracite would not be used where high rates of combustion are demanded in order to justify plants erected on expensive land, and where capital investment is a dominant factor. Even at the same price coke would not be used by many people because of its bulk and its peculiar burning characteristics. The one fuel more likely to become universal, if available, would be gas.

There is ample experience to show that the community will not pay an increased amount for fuel service for the single characteristic of smokelessness. Some individuals will pay, but many individuals will not. If the use of a smokeless fuel is made compulsory for all it must be furnished at a cost for service no greater than that of a competing smoky fuel. This is the objective of all processed fuels, but so far has not been realized in any country.

Furthermore, any fuel can be burned smokelessly, so that it is unreasonable to give any one fuel a monopoly. The first requirement for complete combustion is that the equipment must be designed for the particular fuel used. Second, certain combustion conditions as to time, temperature, and turbulence must be continually maintained. Third, intelligent management and skilled operation must be constantly available. These three conditions are best met in large plants where coal burning is concentrated.

New large plants now being designed take the smoke problem seriously and such plants are no longer main offenders. Not long ago such large plants gave the smoke problem scant consideration, so that the modernizing of old plants is good "smoke abatement."

The railroads present a peculiar problem, and they are still producers of much smoke except where great pressure is maintained on the operating organization. To the railroads smoke abatement costs money. They know what to do if compelled to do it, but efforts in this direction would increase employment but little. The small industries, apartment houses, and domestic fires are now the main producers of smoke.

The equipment used in these plants has not been designed for any one fuel, but has always been a compromise with cost the dominating factor. The same devices are still installed for any fuel from gas to high volatile coal. To change this equipment would require assur-

ance that a single type of fuel would always be available at minimum cost over a long period of time. To change all plants to new equipment would probably be prohibitive.

The third requirement for smokeless combustion is skilled operation and intelligent management. This is a matter of education and propaganda. It will not totally eliminate smoke nor entirely solve the problem, but it will greatly reduce smoke and a part of it may produce permanent betterment. Efforts in this direction is the best that can be done in the present state of the art with emergency funds. Statistical inquiry can be made to define present performance to which reference can later be made to measure the amount of improvement. This is a necessary part of smoke abatement and is also needed to allocate responsibility for smoke to guide technicians in methods of abatement and to justify expenditures by showing the amount of improvement. It is desirable to educate management in order that proper equipment and fuel shall be bought and that operation shall be effectively supervised and proper wages paid for skill. It is necessary to teach firing methods, to make known the facts of combustion, to further the use of effective devices, and oppose ineffective ones.

Work of this kind was done with Civil Works Administration funds in Chicago. Support was withdrawn when the program outlined was less than half done. The net result was as follows:

[From Coal Heat, August 1934]

THE CAMPAIGN

1. Covered territory never before possible of regular supervision.
2. Made hundreds of people smoke conscious for the first time.
3. Educated large number of janitors, owners, and operators of heating plants in the proper methods of handling their furnaces.
4. Showed the remarkable progress in railroad smoke abatement resulting from continuous effort over a period of years.
5. Developed the overwhelming importance of the domestic and apartment-house smoke as the future problem and pointed the way for future efforts to obtain most beneficial results.

Nearly every industrial city using bituminous coal has a smoke problem; perhaps the best and most active work in smoke abatement being done at present is in Hudson County, N. J., across from New York City.

Wherever local sentiment will support smoke-abatement work something might be done similar to what was done with C. W. A. funds in Chicago. Public sentiment waxes and wanes and usually responds slowly to propaganda in this field. Many promising smoke-abatement movements have been entirely killed as the result of the depression. Educational efforts to make the community conscious of the size of the problem have largely been stopped. Stopping smoke-abatement efforts in Salt Lake City for 1 year resulted in dropping back 4 years. This shows the necessity of continuous effort and how poorly adapted the problem is to temporary support. Any result obtained by temporary emergency funds must be expected to be largely temporary in nature. Some valuable permanent results will be obtained but the main justification must be found in the temporary employment of technical and semitechnical "white collar" people.

From the foregoing discussion it is seen that methods of smoke abatement include a wide variety of activities and the most needed are in the field of research on what to measure, how to measure, and how to define. Methods used in this field are those of the experimentalist, the pathologist, the chemist, and the physicist. One writer says: "What we need is not more and severer ordinances but more cooperative research and constructive development." Such work requires time and continuing of efforts and is largely foreign in emergency methods.

There is much work to be done in the field of processed fuel. Here again the need is for continued well-sustained effort rather than temporary emergency expenditure. Many millions have been spent in this field and success is still elusive. There are a few problems that might employ technical people for periods of, say a year, but they would be fragmentary contributions producing little immediate results. The justification again would be in the employment of technical people.

In the educational field, training firemen, informing the coal user, and the public generally how to make better use of the fuels we now have, the equipment now installed, and facilities for improvement that are now available, constitute the practical field of smoke abatement as the term is usually understood. Like any educational effort it is never complete, must be continually repeated, and the results are never 100 percent. They are, nevertheless, worth while. It was this phase of smoke-abatement work that was supported by C. W. A. funds in Chicago. Similar efforts could be undertaken in many places.

An article in *Mechanical Engineering* of April 1926 gives additional information on this subject, as follows—I have been guilty of writing on this for the last 25 years, so that I can pull it out of my barrel at any time [reading]:

KEEPING THE ATMOSPHERE CLEAN

Why is it that smoke-abatement efforts do not bring more satisfactory results?

The main reason is an incorrect estimate of the kind and size of the job. When an industrial community realizes that keeping the air clean is a project of similar magnitude to keeping streets clean, providing clean water, removing city waste, or guarding the moral atmosphere, then there may be a real hope of success. We usually think of the project in too small terms. It is thought of as is the dog catcher or the boiler inspector—a matter of a man or two, a job or two, a small appropriation of variable and uncertain amount, to be abolished in a fit of economy and reestablished under pressure of a vigorous minority.

Even so, it is surprising how much is obtained for the effort; but the community is rarely satisfied, for the job is bigger than it was conceived to be.

Continuous never-ceasing effort is required to clean up a smoky city. A few months of relaxation and the situation slips back some years of effort.

It is useless to look for a spectacular cure. Success comes only after long-continued, highly skillful effort. When a new plant goes in and it proves to be a smoker, it is difficult to remedy the condition. The community will probably have to stand smoke for a long time, while the owner spends money temporizing with weak expedients, finally arriving at the conclusion that "it cannot be done." The remedy is to provide such engineering oversight of new installations as to ensure a nonsmoking plant to begin with. This can be done. It may mean changes in building plans, a larger investment, a greater responsibility of management, a more intelligent operation, but these things are the price of clean air. The higher grade of installation usually pays well by reducing running expenses. It is of little use to complain of smoky stacks

and allow new ones to be added daily. It is not often that smokelessness is one of the main objectives in an installation. Capacity, convenience, efficiency, and low cost come first, with a weak but laudable hope that smokelessness can be had also at an increase in cost. The order must be reversed in the public mind if we are to have clean air. Smokelessness must be a first requirement. These simple illustrations indicate that successful smoke abatement is a problem requiring high technical ability, the administration of a difficult human problem, a change in attitude of a community, a willingness to wait for results, and a readiness to pay for continuous, long-time effort free from political control. So far we have not found this combination, so that results are partial.

There is a great waste of ineffective effort in smoke abatement agitation that gets nowhere, because of a lack of vision as to the kind of job it is and an unwillingness to pay the price.

Engineers believe that it can be done, and at a price not out of proportion to its worth.

Mr. HOOD. It is, if you have the proper things to go with it.

Mr. JAMES L. QUINN. It comes back to the proposition that with reasonable equipment and intelligent control of the human elements. You are reasonably familiar with the city of Washington and the atmospheric conditions in it?

Mr. HOOD. I have lived here 16 years.

Mr. JAMES L. QUINN. I do not have the figures, but it is reasonably free of smoke; it is away down in the list in the percentage of smoke?

Mr. HOOD. No, no; it is one of the cleanest cities. You go to industrial cities, such as Pittsburgh, St. Louis, Indianapolis, and Chicago, and it is a good deal worse there than it is here.

Mr. JAMES L. QUINN. And Cincinnati?

Mr. HOOD. And Cincinnati. [Laughter.]

Mr. JAMES L. QUINN. Now, Mr. Hood, of course, you are reasonably familiar with Pittsburgh?

Mr. HOOD. I lived there 7 years.

Mr. JAMES L. QUINN. I knew you were intelligent and thought necessarily you had been there. [Laughter.] You mentioned that the greatest progress, however, had been made over in New Jersey. Do you not think our Mellon Institute has made wonderful progress in the matter of smoke abatement in Pittsburgh?

Mr. HOOD. You misunderstood me.

Mr. JAMES L. QUINN. Am I right?

Mr. HOOD. The statement was, at the present moment the most active and the best work really being done is in Hoboken or in Jersey City.

Mr. JAMES L. QUINN. You know the improvement we have made?

Mr. HOOD. I know the work being done over there.

Mr. JAMES L. QUINN. And yet that result is maintained, you will admit, with purely soft coal. Now, you said something about making the people "smoke conscious." You have here under your civic set-up the greatest propaganda organization in the United States?

Mr. HOOD. I think they are doing an excellent job.

Mr. JAMES L. QUINN. I congratulate them. You are familiar with these bills?

Mr. HOOD. I have read them just once. They came to me Saturday.

Mr. JAMES L. QUINN. As a whole, what do you think of them?

Mr. HOOD. I do not like them.

Mr. JAMES L. QUINN. There is room for vast improvement in those bills?

Mr. HOOD. I think so.

Mr. JAMES L. QUINN. Do you not think that we can construct bills here along scientific lines and solve this smoke problem they may have and induce this great propaganda organization of these allied civic clubs to make it the finest smokeless city in the world?

Mr. HOOD. It is all possible.

Mr. JAMES L. QUINN. It is very easily done here, is it not?

Mr. HOOD. No.

Mr. JAMES L. QUINN. Why is it not easily done here?

Mr. HOOD. It is rather difficult to do.

Mr. JAMES L. QUINN. Certainly there is no complex situation here in Washington?

Mr. HOOD. I do not know about the complexity.

Mr. JAMES L. QUINN. Then, why would it be difficult, in your opinion?

Mr. HOOD. Technically—I may add that I think this bill in an earlier form mentioned a sum of money. I think I know where that suggestion came from, \$25,000. I sat in a committee meeting with Colonel Grant, Dr. Fowler, and some others some years ago on this subject, and I sang the same song I am singing now; that is to say, the job is a big job; \$25,000 is a very minimum amount to be expended on the one particular thing of smoke abatement. If you really want a good job, you have to spend twice as much as that on the one thing—smoke abatement—and not mix it with boiler inspection, which is a totally different proposition.

Mr. JAMES L. QUINN. I appreciate that.

Mr. HOOD. Frankly, I look at this boiler-inspection business in this bill simply as a red herring to dodge the main issue.

Mr. JAMES L. QUINN. Absolutely, I agree with you.

Mr. HOOD. It is difficult for another reason: There are very few men in this country who know how to produce results—smoke-abatement men are scarce, and the reason is that a good engineer of the type that would really make a good job of it finds he is not paid enough, and therefore it does not attract him, and we do not have a line of young technical graduates who have specialized in that field—very few men, although you have the money and although you have the ordinance, frankly, I would not know just where to find the man just now. That is why it is difficult.

There are a lot of things you cannot buy with money, and that is one of them.

Mrs. JENCKES. Mr. Hood, do you not think that with the knowledge that your department has with the engineers on its staff it is possible to get assistance so that we can better the conditions very decidedly through civic organizations, and through them put out to the individual householder and the individual who runs a furnace in his own house or in an apartment building the necessary knowledge of proper firing methods and proper control of the heat? And that that would better our condition here in Washington, because even in industrial centers—and I live in a soft-coal district—I am told by a man who says he knows that it is the aggregate of the individual chimneys which makes the great percentage of the dirt, the condition we are complaining about right here. Of course, we know it is the individual coal burner, either in apartments or in a single house, that contributes the dirt; and do you not think if we approach them and if these people who represent Washington home

owners and householders, that if they go out and with their neighbors cooperate with us here, we are going to be able to bring about the improvement we want?

Mr. HOOD. I think so.

Mrs. JENCKES. It is largely a matter of cooperation?

Mr. HOOD. Yes; but you have got to spend money to do it, and you have to have a leader rather than a driver.

Mrs. JENCKES. Oh, yes.

Mr. HOOD. There is one fundamental thing in this business that I believe thoroughly. When you try to do a cheap job in smoke abatement, you usually have recourse to a certain method, because it is a cheap method, that which I call the "spotter method"—a nice young man with a stop watch, plenty of time on his hands, watches stacks. He considers the ordinance. If they are allowed to smoke for 2 minutes in any 1 hour he records whether it does or does not.

And that young man could not show the dorky that was making the smoke how to fire that boiler to save his neck; he could not help him at all.

Now, contrary to the spotter method, is what I consider the proper method—the engineer approach to it. These men in that organization should know what it is reasonable to expect both from the human material, the mechanical equipment, and the available fuel, and he should be a leader and show that man how he can burn that coal smokelessly. If it cannot be done with that equipment, then he ought to go to the owner and demonstrate that it cannot be done with that equipment, and the equipment must be made so that it will burn it smokeless.

Now, those are the real problems of smoke abatement; and how far down in the size of the plant you can afford to go with that simply depends on the size of your pocketbook. For instance, good engineers can go to, say, the little laundry or to the small manufacturing plant or the apartment house, and he can cover a certain number in a day. But to go up and down the street with thousands and thousands of small furnaces just how far he can go you can see it would take a good many people to do that.

That is another reason why it is hard—it is hard to get at. The greatest hope, I should think, for real smoke abatement in any community of this kind is a rigid control of new equipment—proper control of that equipment; and it may be 20 years before the old equipment is all worn out and the new has taken its place. That is why you have to be patient with your equipment. That is another hard thing to do.

Mr. JAMES L. QUINN. I know that your agency, the Bureau of Mines, and its various branches throughout the country have rendered valuable service in solving this very complex problem.

If this committee is going to solve the difficulty and eliminate smoke, I know you will make it possible, because you are capable.

Mrs. JENCKES. It is going to be necessary that we travel. We have lots of people who want to be heard, and we want every one to have the opportunity. I am going to ask Mr. Lovell, vice president, Brotherhood of Locomotive Firemen and Enginemen, to speak next because Mr. Lovell has had lots of experience and will be able to give us valuable information.

STATEMENT OF ARTHUR J. LOVELL, VICE PRESIDENT, BROTHERHOOD OF LOCOMOTIVE FIREMEN AND ENGINEMEN, WASHINGTON, D. C.

Mr. LOVELL. Mr. Chairman and members of the committee, I will be glad to be as helpful to you as I can with reference to both of these bills.

Our men operate all of the locomotives on all of these railroads throughout the United States and are constantly confronted with the smoke problem. It seems unnecessary for me to say to your committee that our men are experts. They have spent their lives on these locomotives which burn coal.

There has never been any way yet discovered that will make black coal white; not even whitewashing it will make it white or entirely smokeless. However, through mechanical devices, such as patented front ends, cinder arresters, smoke consumers, superheaters, brick arches, and all of the other appliances that have come through the development of the art of building locomotives in the last 50 years, they have been able to develop—have been brought into focus to eliminate the emission of black smoke. But even with the very best mechanical appliances, even with the most efficient operation on the part of the men, there are times and conditions where black smoke will occur. There is no use trying to jolly ourselves or say it can be totally and absolutely prevented on the railroads.

Now, these two bills, H. R. 7204 and 6232, which are pending before your committee, have for their purpose the elimination of smoke, and I am thoroughly in accord with them, as are all of our men. In this beautiful city, which is the Nation's Capital, and where we have more beautiful buildings of white marble and white stone and more beautiful homes perhaps than any other one city, every effort should be made to eliminate smoke that discolors these buildings and that would be injurious to the health of residents of this our Capital City.

It appears in both of these bills—and I am not going to take over 10 minutes of your time and try to make it less, and Mr. Corbett, one of my associates here, will be glad to speak, and he said it would only take him 2 minutes—without going into the merits of the bills or their details, they seem to apply particularly to apartment houses and other similar buildings in Washington, as well as homes.

In my 10 years of location here on Capitol Hill and having been up in the air a few times, you can pretty readily discover the places that follow the smoke ordinances that have been long in existence in the Nation's Capital. They have obeyed it rather erratically; they do not make black smoke constantly. But I have seen some of these warehouses right in the immediate vicinity of the Capitol Hill which make no smoke; there is no smoke appearing from their smokestacks perhaps for hours at a time. But suddenly there will be a belching of smoke that looks like it was coming out of a tar barrel that will last 10 or 15 or 20 minutes, very black. It seems to me there is something wrong there. There is perhaps inadequate attention that does not apply to locomotives. Our men are constantly on the job; they are doing the best they can. The only time our men fall down is when they start one of these heavy trains suddenly, or a switch engine, and there is no way to eliminate that, to undertake to pull a train of heavy cars that requires the fireman to stir the fires in these

locomotives. Our locomotives are highly efficient machines. By that I mean they carry a minimum pressure of about 150 pounds per square inch and up to 450 pounds per square inch. They burn coal more intensively, more furiously, if I may use that word, than you do in any stationary heating plant, where you are only carrying 15 to 20 pounds steam pressure. In those plants you could have absolute control of the smoke nuisance, but on locomotives there may be momentarily instances where you start one of these heavy trains out of the depot consisting of 16 or 18 Pullman cars, when they have an emission of black smoke.

The amendments I would like to offer to the bill are:

First, to H. R. 7204, on page 8—

Mrs. JENCKES. Have you the amendments in writing?

Mr. LOVELL. I have; yes, ma'am.

Mrs. JENCKES. Thank you.

Mr. LOVELL. On page 10, I should say. In section 20, to amend, beginning with line 15, by adding this simple language (reading):

Provided, That no penalty shall be assessed against any employee engaged in the operation of a steam locomotive within the District of Columbia and the railroad owning or operating such locomotive will be held responsible for any violations of this act or of any regulations of the Commissioners made hereunder.

Our purpose in that, Madam Chairman, is that our men who work for small wages, cannot afford to pay fines or to be held responsible for the mechanical equipment that may be out of order or may lack proper maintenance.

Now, on H. R. 6232 I wish to suggest the following amendment to section 3, appearing on page 2, line 11, by adding the following (reading):

Provided, That no penalty shall be assessed against any employee engaged in the operation of any steam locomotive within the District of Columbia and the railroad company owning or operating such locomotive will be held responsible for any violation of this act or any regulation of the Commissioners made hereunder.

I think that is a reasonable amendment in both instances, because our men are simply the employees; they do not have jurisdiction of the equipment; they only operate it; they are not responsible for its maintenance or upkeep. I wish to thank you and the members of your committee for the privilege of appearing before you, and I would like you to hear Mr. Corbett.

Mrs. JENCKES. Are there any questions the members of the committee desire to ask Mr. Lovell? [After a pause.] We thank you very much, Mr. Lovell.

STATEMENT OF JOHN T. CORBETT, NATIONAL LEGISLATIVE REPRESENTATIVE, BROTHERHOOD OF LOCOMOTIVE FIREMEN AND ENGINEERS, WASHINGTON, D. C.

Mrs. JENCKES. Please give your full name and state the position you occupy.

Mr. CORBETT. My name is John T. Corbett, national legislative representative of the Brotherhood of Locomotive Engineers.

Mr. Lovell, who has just spoken, and I have discussed this previous to coming over here, and he has presented the statement that I wish to endorse.

There are just one or two more things that your attention should be called to in connection with this proposed legislation. A large part of the day you cannot see smoke. Your complaint is directed only to that portion of the day in which you can see the smoke. You can have ever so many violations from possibly 4 or 5 o'clock in the evening until 6 o'clock in the morning and no complaint will probably be made because of it; and your attention should be called to the fact that it is during the long winter months, when the largest part of your day is in darkness, that the real trouble is developed; that is, in connection with house heating. In your industrial plants no such a condition usually obtains, because there is more need for power generally in the daytime.

Now, smoke scientifically is the lack of consumption of carbon in the firebox; that is all it is. It is minute particles of carbon that are released unconsumed. Proper firing with proper equipment probably would be capable of eliminating all of that.

Mr. Lovell has covered quite thoroughly the conditions presented by locomotives. And I say this, after nearly 35 years' experience on locomotives, a large part of that time as a fireman. I do not know that there is anything that the carriers could do that they have not done in an effort to obtain a condition where no smoke would come from the smokestacks. That is because the carriers have made a scientific study, or as much of a scientific study as it can make, of fuel combustion; and they realize that every time smoke comes out of the smokestack there is that much loss of efficiency from the fuel that has been put in through the fire door.

Now, it is because they have so many thousands or hundreds of thousands of locomotives, and they are watching every possible ounce of fuel and endeavoring to get every possible heat unit out of it that they are watching that so closely. But there will be occasions, just as Mr. Lovell has mentioned—and I might cite one of them: A locomotive going up grade is being compelled to produce every particle of heat energy that it can. Now, the fuel is being put in there as carefully as possible. The fireman opens the fire door, and to your eye it looks just like a big blaze, but his eyes see the different white spots in that firebox—some of those fireboxes are 11 feet long and possibly 5 feet wide—and just as he opens the door and throws in that fuel he shoots it at a white spot.

Now, then, your man that the previous speaker referred to as an inspector, unless his eyes and unless his training has been such as to detect those things, he cannot go in and demonstrate it; no college professor can possibly hope to do it in competition with someone who has been so trained.

There are those conditions which, if an emergency happens and the engineer shuts off the throttle, immediately there is going to be smoke for a minute or 2 or 3 minutes, possibly, before the different contrivances can be taken care of that will simply endeavor to burn up those particles of carbon in the firebox. That is generally done by blowing steam in over the fire; in other words, it is just the same as throwing water onto it, and for a minute or two it is impossible to prevent the emission of smoke.

The different contrivances that are on a locomotive for smoke prevention could not be properly installed on house-heating plants, for the reason that on a locomotive, as I have mentioned, practi-

cally all of the contrivances are steam; that is, blown in over your fire, probably at anywhere from 150 to 250 pounds pressure. Now, you can appreciate that there are no house-heating plants that would be so equipped that they would have the same thing. The only thing that can be done in a house-heating plant is possibly to put in a little bit bigger plant than is needed; in other words, if you try to crowd a small plant, it must result occasionally, if you have to rake the fire especially, in a production of smoke.

The remarks of the speaker who has mentioned the rigid control of new equipment, I think, should receive considerable attention.

Now, the railroads and their employees are heartily in accord with the efforts that may be made for this purpose; but we would hope that any consideration that you give to this—well, give special attention to the fact that there are times when the human element must be permitted to violate the law for a minute. It may be not so much carelessness as the inability for a minute or 2 minutes to take care of it. Thank you.

Mr. JAMES L. QUINN. You are a resident of the District here?

Mr. CORBETT. Am I?

Mr. JAMES L. QUINN. Yes.

Mr. CORBETT. I have been living here now for the last 3 years while Congress is in session.

Mr. JAMES L. QUINN. You are a practical railroad locomotive engineer?

Mr. CORBETT. Yes, sir.

Mr. JAMES L. QUINN. There is no connection between a boiler inspector and the man interested in the elimination of smoke, is there? There is no affinity there—nothing in common?

Mr. CORBETT. You mean in the mechanical way?

Mr. JAMES L. QUINN. In a mechanical way or in a scientific way?

Mr. CORBETT. I presume that would necessarily take into consideration the training that that boiler inspector may have had.

Mr. JAMES L. QUINN. I appreciate that; that is, in connection with boiler-inspection work, it would be beneficial to him. But one is purely a health measure and the other, the boiler inspector, is a safety problem?

Mr. CORBETT. The boiler inspector, or those of whom I have made no mention, have been—or at least, most of them have been—trained as experienced firemen and possibly engineers.

Mr. JAMES L. QUINN. You are talking about railroad men?

Mr. CORBETT. Yes, sir.

Mr. JAMES L. QUINN. The boiler inspector has nothing to do with the elimination of smoke?

Mr. CORBETT. Not the safety part.

Mr. JAMES L. QUINN. That is about all an inspector is concerned with—safety?

Mr. CORBETT. Well, it would depend on what his examination demanded of him.

Mr. JAMES L. QUINN. What else would it be? Why would he inspect a boiler if it was not to provide for safety?

Mr. CORBETT. That is true.

Mr. JAMES L. QUINN. That is all the function he has, is it not?

Mr. CORBETT. Yes, sir.

STATEMENT OF HENRY I. QUINN, ATTORNEY AT LAW,
WASHINGTON, D. C.

Mr. HENRY I. QUINN. I am not an engineer, and I do not claim to have any practical knowledge of this matter, but my interest was attracted—

Mr. JAMES L. QUINN. I never heard a lawyer say other than that he knew all about everything.

Mr. HENRY I. QUINN. Here is one who does not claim to know all about everything.

My attention was attracted to this matter by H. R. 6232, which is one of the bills before your committee.

Mr. WOOD. Whom do you represent?

Mr. HENRY I. QUINN. I am a member of the Federation of Citizens' Associations.

Mr. JAMES L. QUINN. You are not representing the school board?

Mr. HENRY I. QUINN. I am not representing the school board nor the Federation.

Mr. WOOD. What is the basis of representation of the citizens' associations?

Mr. HENRY I. QUINN. The Federation of Citizens' Associations is composed of citizens' associations of the District of Columbia. There are 60 or more citizens' associations, and they have each two delegates.

Mr. WOOD. Who are these citizens' associations? Whom are they composed of?

Mr. HENRY I. QUINN. The residents of each area; each citizens' association covers a certain area of the city and they are interested in all matters affecting public health, taxation, et cetera. They send their delegates to this federation. We have discussed this matter—

Mr. WOOD. The proposition of the citizens' associations, I want to get that clear in my mind. That is composed of just any citizen in that territory?

Mr. HENRY I. QUINN. Any citizen in that territory interested in civic matters, business and professional men and housewives belong to it. They band together to promote the interests of their own community.

Mr. WOOD. They are not dues-paying organizations?

Mr. HENRY I. QUINN. Most of them have nominal dues of a dollar a year for membership, and then they send the two delegates from each of these citizens' association to the federation.

This bill, H. R. 6232, has been referred to as the Roberts bill because I think it was drawn by the Peoples' Counsel of the District of Columbia, Mr. Roberts. It provides that the "Emission of unnecessary smoke, noxious gases, cinders, or dust into the atmosphere within the District of Columbia is hereby declared to be unlawful and a menace to public health and safety."

Now, that act, if passed with the proviso at the bottom that all provisions of existing law, and referring particularly to the provisions in the District Code at the present time for the preventing of smoke, that are antagonistic or inconsistent with H. R. 6232 shall be repealed is going to leave us in this situation:

The first case that goes into court under this act as drawn the courts are going to declare it unconstitutional and then you will

have no smoke law in the District of Columbia. Our courts have time and time again held that such an indefinite term as "unnecessary" in a penal statute is not enforceable. There is no standard of guilt by which you can measure a person's acts. No one knows when he has violated the law until some official has said or some court has said "This thing is unnecessary and unreasonable."

You members of the committee are familiar with the case that went to the Supreme Court of the United States under the Lever Food Control Act during the World War—the food-profiteering act; the *Cohen case*, in which the Supreme Court of the United States held the act unconstitutional because of the words "unjust and unreasonable."

So I submit that this act could never be enforced.

Now, if it is desired to extend the provisions of the existing smoke law to a locomotive engine or private residence, that can easily be accomplished by adding to section 61, which is the first paragraph of the present smoke law, 2 or 3 words, or eliminate 1 word: for instance "chimney used in connection with any stationary engine"—if you want to make it applicable to a locomotive engine you can strike out the word "stationary" and make it applicable to any engine, or if you want to make it applicable to private residences, you can add a word or two there. And then you have that covered into an act that has been continually upheld by our courts and which has been applied even to Government buildings, because there was a prosecution of the Public Printer at the Government Printing Office under this present act and it was upheld by our court of appeals.

Mr. WOOD. Let me ask you a question: Was there any prosecution of any private interests?

Mr. HENRY I. QUINN. Oh, many. The only trouble with our present act, as far as enforcement is concerned, is the lack of sufficient personnel, of inspectors, to enforce it.

I submit that Congress will be doing a far wiser thing if it appropriates sufficient money to give to the District Commissioners an ample corps of inspectors to enforce the present law.

We can talk about all of these technical matters in connection with the prevention of smoke, but it is interesting to note that Mr. Hood, and the gentlemen representing the locomotive enginemen—all of them—when they talk about improved equipment, finally come back to the matter of the human element in this proposition, and Mr. Hood said intelligent control is one of the important factors in this matter.

Another gentleman, representing the engineers, said that proper firing is a big thing in this matter.

Now, why not amend the present law without fear of running up against a constitutional objection in the courts, because the present law has already been upheld?

Mr. WOOD. May I ask again, "How would you draft a statute to enforce proper firing of railroad engines?" That has not anything to do with the provisions of this bill at all.

Mr. HENRY I. QUINN. No; it does not. But I would not pass any act requiring them to properly fire; I would insist upon the enforcement of the present law, if you deem it desirable to apply to locomotive engines, and amend it so as to apply to them, and then it is

up to the companies to see that there is no emission of this dense, thick, black smoke, which is held to be a violation of law.

Mr. WOOD. You say the engineer? Would you make the engineer responsible for the failure of the operation of a railroad engine?

Mr. HENRY I. QUINN. I would not say I would do that.

Mr. WOOD. Is that the only way we can eliminate this unnecessary smoke?

Mr. HENRY I. QUINN. You can put the responsibility on the railroad.

Mr. WOOD. Why should it be put on him—the engineer—when he has not anything to do with the type of coal or the fireman or the kind of engine he is operating?

Mr. HENRY I. QUINN. I do not say it should be put on the engineer, no; the responsibility would be on the railroads for violation of the law, and they would see to it that their engineers and firemen properly handled those engines, and they would do everything in their power to eliminate this black smoke.

The same thing would apply to the apartment houses: If the apartment-house owner or agent knew that he was to be held responsible for the violation of the law, he would insist upon his engineer handling it properly; and if he did not handle it properly he would get an efficient engineer, one who would obey orders.

I know from practical experience that the character of a fire has a great deal to do with it and also the adjustment of equipment; for instance, I have an oil burner. I never had any trouble with it until one time it was adjusted by one of these so-called "mechanics" for one of the oil companies, and he made a "beautiful" adjustment of it. Then a week or two afterward I noticed soot and smoke coming out of my chimney. I looked into the firebox and I found a piece of carbon about that big [illustrating] right in the firebox, and there was my trouble. When a competent mechanic came there and adjusted that it went ahead and fired all right, and I never had any more trouble with smoke.

We will find in a neighborhood smoke coming from one chimney probably heavy and dense. The people fire their own furnace, using coal and using the same type of coal that their neighbors are using, but they are not firing it properly; but if they knew they might be convicted of an offense under this smoke law, then they would see to it that they obeyed the law and would be more careful.

I submit, gentlemen of the committee, if you will amend this present law and then give the Commissioners a sufficient corps of inspectors to enforce it, that you will get results.

Mrs. JENCKES. Mr. QUINN, we thank you very much. Is that the present code, may I ask? Not being a lawyer, I am going to take an easy way of finding out when I go back to my office.

Mr. HENRY I. QUINN. This is the present code, and you will find the present smoke law at page 183, chapter 5, section 72.

Mr. JAMES L. QUINN. Mr. QUINN, before retiring, in your judgment, the present code is O. K., with a few changes, and let the Commissioners enforce the code, give them some more money to enable them to have a proper personnel in that department, which includes, you agree with Mr. Hood that you have to have a high type of experts here?

Mr. HENRY I. QUINN. I agree with Mr. Hood to this extent: That I think the rigid enforcement of this law, accompanied possibly by a plan of education, would accomplish a great deal to eliminate smoke in this city.

Mr. JAMES L. QUINN. What the Commissioners would need then would be a thoroughly competent man to head that department, who would have scientific knowledge?

Mr. HENRY I. QUINN. That is it.

Mr. JAMES L. QUINN. Has your Federation of Civic Organizations ever done anything in a practical way outside of passing resolutions?

Mr. HENRY I. QUINN. That is about all we can do, Mr. Quinn. [Laughter.]

Mr. JAMES L. QUINN (continuing). To eliminate smoke in the District?

Mr. HENRY I. QUINN. No; we have not, except that we have petitioned Congress from time to time to give us the money we need to enforce the law.

Mr. JAMES L. QUINN. Have you ever attempted an educational campaign?

Mr. HENRY I. QUINN. No.

Mr. WOOD. You can promulgate legislation such as in that bill and present it to Congress. Has your association ever done that?

Mr. HENRY I. QUINN. As a general rule the association passes a resolution outlining the principles which it thinks should go into the bill. Very often the corporation counsel will draw a bill along the lines that it proposes; and after conference with the Commissioners the bill is drafted.

Mrs. JENCKES. Mr. Quinn, you do not think that the individual members of the citizens' associations have any idea that their responsibility ends when they present these resolutions to us?

Mr. HENRY I. QUINN. Oh, no; and they come up here.

Mrs. JENCKES. I grant you that all of you come up here. But I mean in this thing of firing your individual furnaces, whether each citizen of the District, each furnace user, have made up their minds we are not going to have this smoke coming out of chimneys, and the information Mr. Hood and the Bureau of Mines have can be disseminated more easily in Washington than any place I know of, because you already have the nucleus—people who gather together every two weeks for the benefit of the community.

I will say to my colleague from Missouri, who is new in this Congress, that I have known of no place where the individual citizen is banded in a group which makes a unit to which this information can be put out as readily and as quickly; and if the individual householder wants to help us and help themselves, they can do it by the control of their own furnace.

I live in an apartment building, but I know that the engineer in my building can do a great deal to control the smoke that comes from that chimney, and if the president of the company who owns the building where I live knows I am making this determined fight to help him, he is going to help me; and, after all, that is largely what smoke control or any other control is. Congress can write laws which give self-control, but we cannot bring about self-control, and smoke control is one form of considering the welfare of our neighbors and the unselfish attitude toward other people.

MR. HENRY I. QUINN. Madam Chairman, the attitude to which you refer does not need any smoke law. For example, I take a pride in my home; I would not want smoke pouring out of my chimney, for the selfish reason that it would damage the appearance of my home and the homes of my neighbors and lessen the value of my property. But there are so many people who do not think about that and there are so many people who are tenants and who do not have any interest in the furnace and who fire in an improper way.

MRS. JENCKES. That is a job for the citizens' associations to wake those people up.

MR. HENRY I. QUINN. We try to wake them up, and we find, for instance, a citizens' association may have a membership of 200, and until there is something unusual arises there may be an attendance of only 30 or 40 or 50 at the monthly meetings, and there are a great many more in that community who should belong to the citizens' association and take an interest in the community affairs who do not belong and they do not join. They do not take any interest until somebody treads on their corns.

MRS. JENCKES. Not only that, but who get in their pocketbooks.

MR. WOOD. May I interrogate the witness? The question was asked the gentleman who represented the engineers if there was any connection between smoke prevention and boiler safety inspection. Of course, the present witness states he is not an engineer, and I am not either. But, as a matter of practical application, do you not realize that there is an element of safety in this smoke-prevention legislation, in that whenever a stationary boiler is improperly fired, for instance, that they shovel in probably a quarter of a ton of coal in one of these large stationary boilers of an apartment house, and if that boiler is improperly fired there is danger of an explosion. You on occasion have filled your stove full of coal and people who put too much coal on the fire sometimes cause an explosion; and in a furnace, if there are any parts about the stationary boiler which are somewhat defective, the very fact it is improperly fired sometimes creates an explosion.

MR. HENRY I. QUINN. I do not think it is a question of too much coal, though I do not know, as I am an engineer. I never understood it was the result of too much coal which brings on the danger of an explosion; it is too much heat—

MR. WOOD. Oh, yes; too much coal will cause an explosion.

MR. HENRY I. QUINN (continuing). It is usually a case of too little water or something of that sort.

MR. WOOD. If there is too much live coal put on, it creates the gas, causes instantaneous combustion of the material and, necessarily, the explosion.

MR. HENRY I. QUINN. That may be. As I said, I am not an engineer.

MR. WOOD. There is an element of danger in the elimination of smoke?

MR. HENRY I. QUINN. Well, that is something I could not pass on.

MR. JAMES L. QUINN. Let me answer that, Mr. Quinn. An explosion in the firebox has no effect on the boiler, it has nothing to do with the boiler. The boiler inspector has nothing to do whatever except to inspect the boiler. The boiler-inspection laws have no connection whatever with smoke elimination.

Mr. BOWIE. Mr. Quinn, in offering your amendment, would you include residences to the present law?

Mr. HENRY I. QUINN. Yes. I would just amend the present law, and then you have a law which has been upheld by the courts and which covers any of these things you think should be covered, and it should be remembered that the present law covers Government buildings as well.

Mr. JAMES L. QUINN. Mr. Quinn, in conclusion, as a representative of the civic societies, if this committee would decide to do that, would you say that your society will go along in an educational program—and let me say that this committee, I think, is earnest and honest in their efforts to eliminate smoke. We do not have to live here and you do, and we are trying to give you the best thing you can get, and let me suggest, for your benefit, if you start an educational campaign we will do what we can to eliminate your smoke.

Mrs. JENCKES. Mr. Quinn, will you offer that amendment to the present law in writing, and give it to the reporter?

Mr. HENRY I. QUINN. I think Mr. Sullivan has it. I will be glad to foster that educational campaign for you.

Mr. JAMES L. QUINN. That will give you something to start on.

Mrs. JENCKES. We will next be pleased to hear Mrs. Elizabeth T. Sullivan, sent here by the laws and legislation committee of the Progressive Citizens Associations of Georgetown.

STATEMENT OF MRS. ELIZABETH T. SULLIVAN, LAWS AND LEGISLATION COMMITTEE, FEDERATION OF CITIZENS' ASSOCIATIONS, WASHINGTON, D. C.

Mrs. SULLIVAN. The campaign that you speak of has been going on, Madam Chairman, during all the past winter, as well as a good many times before. Mrs. Pinkney and a group of interested women sent a resolution to every citizens' association in the District of Columbia, asking them to endorse a smoke-regulation law. That came to my association—the Progressive Citizens' Association of Georgetown—I think, in November. We endorsed it. Our president signed for our association. I think Mrs. Pinkney has more than a hundred thousand citizens in the District of Columbia who are interested in a smoke law.

It came before the public health committee to decide which of the two bills that had been introduced it should endorse. The public health committee endorsed the short bill drawn by Mr. Roberts at the request of the citizens committee.

Then it went to the floor of the federation, and some of the people did not think that that word "unnecessary" had been correctly defined. So it was then referred to the laws and legislation committee, of which both Mr. Sullivan and Mr. Quinn is a member, and they did not attend the joint meeting of the public health committee with the laws and legislation committee.

Mr. HENRY I. QUINN. I am not a member of that committee.

Mrs. SULLIVAN. You are just a "has been", is that it? [Laughter.]

Mr. HENRY I. QUINN. I was a member.

Mrs. SULLIVAN. Mr. Quinn is one of our most able lawyers, and we consider his advice very valuable.

Mrs. JENCKES. He is very helpful in everything.

Mrs. SULLIVAN. He is a very loyal citizen, and he has done remarkable work for the Board of Education. He has simply given it new life and put it on the face of the map in the District of Columbia in other words.

In this situation, when the bill was originally drafted, the old law was taken and comparisons were made between the now existing law and what would be the best set-up in the District of Columbia.

The principal thing that they wanted to do was to take the old law out of the health department and put it under the Commissioners. So this is the report of the joint committee of the public health and the laws and legislation committee as we state here. Mr. Lodge, our chairman, could not be present and he asked me to represent him. The chairman of the public health committee called me this morning and said he could not possibly be here, and would like to file the report of that committee later with the committee in regard to the public health. The report of the joint committee is very short and I would like to read it [reading]:

Pursuant to the reference to the committee on public health and the committee on law and legislation of the so-called "smoke bills", being known as Senate 2497 and H. R. 6232, with instructions to follow the subject before the Congress and to take such action as the committee deemed advisable, the joint committee met in the office of W. A. Roberts, Esq., people's counsel, and there advised with Mr. Roberts on the subject. After consideration of both bills and the general subject, your joint committees recommend that the federation endorse H. R. 6232 with the following amendments: After the word "Commissioners", line 2, page 2, add "shall make and publish reasonable regulations defining the term 'unnecessary' as used in section 1 hereof and establishing reasonable classifications of offenses hereunder, provided said Commissioners." Amend section 3, line 10, by striking out the figures "\$500" and inserting in lieu thereof the figures "\$100." Senate bill 2497 is inconsistent with H. R. 6232—

That is the boiler inspection bill—

as it relates to the smoke law, and your committees prefer H. R. 6232, and they do not pass upon the provision of Senate 2497 as it relates to the inspection, control, and regulation of steam boilers and unfired pressure vessels.

Your committee recommend that this report be supplemental to the report of the public health committee, heretofore discussed on the floor of the federation, and that it be made a part hereof insofar as it is not inconsistent with the recommendations here made.

We feel that the District Commissioners, as the campaign goes on from time to time, will make more stringent regulations, and it would be very much more helpful than to lay down just the price or the inspection by a boiler inspector, et cetera, as in the other bill.

Mr. JAMES L. QUINN. Mrs. Sullivan, did you consider the other bill?

Mrs. SULLIVAN. We did consider the other bill, and we considered it as a smoke screen; that it was a very good boiler-inspection bill but not a good smoke bill.

Mr. JAMES L. QUINN. Mrs. Sullivan, how does your organization consider legislation affecting the District?

Mrs. SULLIVAN. Well, the Federation of Citizens' Associations considers it in this way: A member organization brings in a recommendation, just like the smoke bill, for example. Then it goes to a committee that handles that subject; for instance, this bill has been considered by both the public health and the law and legislation committees; and then they make a report to the federation,

and the federation—its delegates—each citizens' association has two delegates and the majority of the members of the federation vote on the bill.

Mr. JAMES L. QUINN. You are the representative from the federation?

Mrs. SULLIVAN. I am the representative from the federation. Both Mr. Sullivan and Mr. Quinn fought us on the floor of the federation on Saturday night, for amending the present law, that is their tendency; they think our laws are very good, and some of the rest of us do and some of us do not. We do feel that some laws could be improved upon.

Mr. JAMES L. QUINN. Is Mr. Quinn the representative from the federation?

Mrs. SULLIVAN. Yes; Mr. Quinn is one of our delegates. There are a hundred and some of us, two from each organization; for instance, I am from the Progressive Citizens' Association. We have two delegated to the Federation. We have in all about 130—some delegates, who meet every 2 weeks during the time Congress is in session.

Mrs. JENCKES. Mrs. Sullivan, are you the authorized spokesman from your committee?

Mrs. SULLIVAN. I am the authorized spokesman from the joint committees. I was asked to speak for them this morning.

Mr. JAMES L. QUINN. Mr. Quinn is a very brilliant lawyer. You paid him a wonderful tribute. He says this measure is no good.

Mrs. SULLIVAN. He does not like the "unnecessary" feature of it.

Mrs. JENCKES. Are you an attorney?

Mrs. SULLIVAN. No, I am not an attorney; but I have been a member of the law and legislation committee many years, and I was put on there because I was not an attorney. [Laughter and applause.]

Mr. JAMES L. QUINN. What I am trying to get is, Why the lack of cohesiveness in this civic organization?

Mrs. SULLIVAN. We have to have diversity of opinion. I think in your committee you also have to have that.

Mr. JAMES L. QUINN. It is a matter of life.

Mrs. SULLIVAN. You have a little diversity of opinion. We have it. Some of us depend on our attorneys for advice, but we feel the District Commissioners are here on the spot and they can make the regulations as they go along and that they can use what facilities they have; for instance, they have Mr. Hood here, who would help them educate the public. We realize we need more money to run our District government, and we think that we should have plenty of money to run the smoke inspection. It is necessary, because we have the most beautiful buildings in the world here that are being badly injured by smoke and dirt.

Mrs. JENCKES. Mrs. Sullivan, may I call your attention to the fact that the District of Columbia has the lowest tax rate in the United States for a city of its size?

Mrs. SULLIVAN. The Federation have been to the commissioners and offered suggestions as to remedies. That is not quite the fact, Mrs. Jenckes, as you will see from a study of this statement of assessed value of the taxable real estate in the 30 largest cities of the United States.

Assessed value of the taxable real estate in the 30 largest cities

[From data secured in 1934]

City	Population	Land	Buildings	Total	Per capita	Tax rate	Tax capita
1. New York	7,154,300	\$8,000,995,996	\$8,061,388,322	\$16,062,384,318	\$2,240	\$2.77	\$52.00
2. Chicago	3,490,700	883,850,850	1,214,152,941	2,098,003,781	600	7.50	45.00
3. Philadelphia	1,972,700	1,360,000,000	1,711,877,946	3,071,877,946	1,560	2.67	41.80
4. Detroit	1,695,100	1,705,356,530	1,088,659,930	1,884,016,460	1,135	2.97	33.60
5. Los Angeles	1,354,100	696,393,744	455,709,090	1,112,102,804	825	4.10	33.70
6. Cleveland	918,400	357,806,920	512,255,980	900,162,800	980	2.99	29.50
7. St. Louis	830,800	335,000,000	583,500,830	908,500,830	1,100	2.74	30.00
8. Baltimore	817,100	376,421,338	751,781,930	1,128,203,268	1,380	2.67	36.80
9. Boston	786,900	803,035,900	848,936,900	1,651,972,800	2,100	3.28	69.00
10. Pittsburgh	678,500	566,584,170	614,274,490		840	4.10	33.70
					900	2.98	26.80
11. San Francisco	656,200	335,541,755	331,510,975	1,180,808,690	1,740	3.47	60.50
12. Milwaukee	599,100	313,156,390	480,026,510	667,052,730	1,320	3.48	36.40
13. Buffalo	584,400	379,464,100	550,691,440	793,182,900	1,325	3.28	43.50
14. Washington	485,000	498,531,097	669,671,123	930,155,000	1,595	3.18	50.80
15. Minneapolis	477,000	121,000,000	150,238,482	1,168,252,230	2,360	1.50	35.20
16. New Orleans	471,000	272,255,180	233,613,151	274,238,452	575	7.70	41.00
17. Cincinnati	460,100	157,390,599	483,956,710	390,993,750	830	3.77	31.00
18. Newark, N. J.	417,000	271,918,721	436,363,800	755,641,890	1,640	2.14	35.00
19. Kansas City	412,000	198,324,460	232,148,410	711,922,521	1,590	3.65	58.00
20. Seattle	374,100	101,457,000	107,712,000	370,472,870	900	3.70	33.90
21. Indianapolis	372,100	168,080,720	241,920,700	410,001,420	1,100	3.13	33.60
22. Rochester	333,500	206,000,000	448,000,000	654,000,000	1,960	2.92	57.20
23. Jersey City	319,900	202,835,051	258,638,751	460,873,802	1,440	4.07	58.70
24. Houston, Tex.	317,900	139,265,370	113,879,050	253,144,420	800	4.78	38.20
25. Louisville	317,500	97,521,298	189,828,657	287,319,925	900	2.90	26.20
26. Portland, Ore.	309,100	139,254,385	127,553,515	266,807,900	865	5.00	43.10
27. Columbus, Ohio	299,700	119,885,000	155,780,860	275,665,860	925	1.73	15.30
28. Toledo, Ohio	298,900	108,425,660	202,696,880	311,122,540	1,040	2.66	27.70
29. Oakland, Calif.	295,600	106,222,170	96,186,625	202,408,795	690	4.99	34.40
30. Denver, Colo.	293,200	92,120,810	144,657,640	236,778,450	810	3.43	27.80
Total	27,803,700	18,100,235,234	21,596,453,608	39,626,668,842	1,425	3.65	44.00

NOTES

Philadelphia and Minneapolis land and buildings values are not separated, and the figures had to be estimated.

In Pittsburgh the graded-tax plan is in force under which there are two rates of taxes for municipal taxation—the higher one for land values and the lower rate for improvement values. By this plan the person who improves his land pays a less tax in proportion than the person who holds vacant unimproved land. This form of taxation has been in force for several years.

About a dozen of the 30 cities report assessing at less than 100 percent as follows: New York, 90 percent; Chicago, 37 percent; Los Angeles, 50 percent; Pittsburgh, 80 percent; Minneapolis, 40 percent; New Orleans, 60 percent; Seattle, 47 percent; Rochester, 80 percent; Houston, 50 percent; Louisville, 80 percent; Portland, 53 percent; Toledo, 80 percent; and Oakland, 35 percent of full value. Area 30 cities 2,704 square miles, or population 10,000 per square mile.

Mrs. JENCKES. The statement has been carried in your District papers.

Mr. HENRY I. QUINN. The statement has been carried, but it has not been confirmed.

Mr. JAMES L. QUINN. You are perfectly satisfied with your Commissioners?

Mrs. SULLIVAN. No. [Laughter.] We would like to have a Commissioner who represented the people of the District of Columbia, but we think we have now some very good Commissioners.

Mr. JAMES L. QUINN. You are willing to let them function and make the rules and regulations as they go along in regard to this smoke control?

Mrs. SULLIVAN. We think that would be all right, because we do not think conditions can be made as strict today as they can be in 5 or 6 years.

Mr. WOOD. You are the accredited representative of this association?

Mrs. SULLIVAN. Yes. I was sent here by the chairman of the law and legislation committee.

Mrs. JENCKES. Of all associations?

Mrs. SULLIVAN. Of the Federation.

Mr. WOOD. Mr. Quinn was sent here because of the usual saying that a lawyer cannot resist the opportunity to testify?

Mrs. SULLIVAN. His opinion differs from our opinion, so I would like his opinion to go on record. I am perfectly willing to have it on record.

Mr. HENRY I. QUINN. The Federation did not pass on this report she has just read. It was defeated by raising the point of no quorum.

Mrs. SULLIVAN. Because Mr. Quinn did the same thing to us on our recreation committee report.

Mrs. JENCKES. We want smoke abatement. Our time is very valuable. If no one wants to ask questions, we will proceed to the next witness.

Mr. JAMES L. QUINN. You do have politics in your association?

Mrs. SULLIVAN. No, no. [Laughter.] I want to say that this education program of which you speak and which you ask to be instituted has been carried on in the District of Columbia for the last 12 or 13 years. We have been busy. People are so selfish they will not do what they should, but we try to educate them to do it.

Mrs. JENCKES. This gentleman from Pittsburgh hereby requests an opportunity to be heard.

STATEMENT OF J. J. HAAS, WASHINGTON, D. C.

Mr. HAAS. Let me correct you. I am not from Pittsburgh. I retired from Pittsburgh in 1910 to live in this beautiful city.

Mrs. JENCKES. Please state your full name.

Mr. HAAS. J. J. Haas; and I do not represent anyone but myself.

Mrs. JENCKES. Will you make us a very concise, quick statement, because there are so many people what want to be heard?

Mr. HAAS. Will you give me 2 minutes?

Mrs. JENCKES. Yes, sir.

Mr. HAAS. I left Pittsburgh because it was so dirty I could not live there.

Mr. JAMES L. QUINN. This is off the record. [Laughter.]

Mr. HAAS. Every winter I got one of those colds which would confine me to my room; in fact, I am sure it would have killed me, and I came down here and found this good old sleepy country village very clear. But the facts are today it is dirtier than Pittsburgh. I will stand on that statement.

Mr. JAMES L. QUINN. Do you want that on the record?

Mr. HAAS. Yes. When we lived in Pittsburgh we put up our curtains, and they would last all winter. You cannot keep window curtains up here 2 weeks in Washington because it has become so dirty.

The dirt——

Mr. JAMES L. QUINN. May I interrupt the gentleman right now? Are you interested in a clean city here?

Mr. HAAS. I am so much interested in it that I got up out of a sick bed to come down here. I should not be here.

Mr. JAMES L. QUINN. And let me say to you it is not necessary to knock one city in order to try to promote another. Are you interested in the health of this city?

Mr. HAAS. Only.

Mr. JAMES L. QUINN. Then just look at the death rate of Pittsburgh, as compared with Washington [handing paper to the witness]. The death rate in Pittsburgh is 10 and yours is 16, the highest in the United States. I regret to have had to bring that out, but you have been talking about Pittsburgh. If you want to give your testimony, I, as one member of this committee, will say that it is not necessary to try to degrade another city. What we are interested in is to try and clean up Washington, not blacken another city.

Mr. HAAS. You did not understand.

Mr. JAMES L. QUINN. Yes; I understood.

Mr. HAAS. I said it is cleaner now than Washington because of the work that has been done there.

Mr. JAMES L. QUINN. Why mention Pittsburgh in connection with this at all?

Mr. HAAS. Well——

Mr. JAMES L. QUINN (interposing). Just notice the figures of our death rate and yours.

Mr. HAAS. Our death rate was high.

Mr. JAMES L. QUINN. Your death rate is 16 and ours 10.

Mr. HAAS. You have incinerators in Pittsburgh which burn your refuse, garbage, and perhaps human bodies.

Mr. JAMES L. QUINN. I suggest that you confine your remarks to the subject under discussion.

Mr. HAAS. I would like you to include incinerators in the bill before your committee, because incinerators are operated after dark. All janitors are instructed to burn garbage, trash, and other refuse between darkness and daylight, so that nobody can see or smell it. The difficulty is this, that on damp, foggy, rainy days, like we had here in December, the gases and the smoke are held down and we are compelled to breathe it, and we had an epidemic in December that laid me up and practically everybody I called up or met with had a cold or nose trouble caused by the gases from the incinerators.

I can qualify as an expert in coal or boilers or builders and I own my house and my skirts are not clean, and I admit it: I have been fined and harassed. But I, as a good citizen, would like to clean up and make Washington a livable place, because if you do not, people like myself are going to Florida. We do not have to live here. There is nothing that compels a person to live here. I am not in any business and I am not looking for any job. I would not accept one if it were offered to me. I am just here in the interest of making our city cleaner so we will be healthier and happier. If we do not do it, this United States Supreme Court Building over here, one of the most beautiful buildings in the world—it will be like the Lincoln Memorial when they cleaned it the shadow effect was gone. All our marble buildings and Indiana limestone buildings with beautiful exteriors cannot be cleaned. Sure, you can sand-blast them or you can chemically clean them, but they are ruined forever. So we will not have a beautiful city in a few years.

Mr. JAMES L. QUINN. You say you own and operate an apartment here?

Mr. HAAS. I do and have since 1910.

Mr. JAMES L. QUINN. With a big furnace in it?

Mr. HAAS. You bet.

Mr. JAMES L. QUINN. Don't you feel if you determined your fireman was going to do a good job, you could get Mr. Hood to send a man from the Bureau of Mines up to your apartment building and show the neighborhood how to fire? There is your opportunity, he will cooperate, and he will fire the engineer if he don't do a good job.

Mr. HAAS. We can do it. But the District of Columbia only has 3 smoke inspectors; they ought to have 30 or 40 or 50. They have no money, have no organization, and they will never get the city clean until you give the Commissioners the money to operate.

Mr. JAMES L. QUINN. In other words, you are against both of these bills?

Mr. HAAS. I am against no bill.

Mr. JAMES L. QUINN. Your recommendation is to get an extra appropriation to take care of this situation?

Mr. HAAS. Let the District Commissioners do it; give them the right and ample money to do it.

Mr. JAMES L. QUINN. They have got the right.

Mr. HAAS. No; they have not. That old law is not worth anything.

Mrs. JENCKES. We thank you. We have present Mr. W. Edward Newbert, who is an engineer from New York City?

STATEMENT OF W. EDWARD NEWBERT, WASHINGTON, D. C.

Mr. NEWBERT. Yes; New York City.

Mrs. JENCKES. Have you any connections, Mr. Newbert, with the Board of Education of New York City?

Mr. NEWBERT. I have been connected with the board of education there for about 12 years, in the building of the largest school houses in the world and the special feature was the heating and ventilating department, where we had heating and ventilation.

I do not want to oppose or support any of these things, but I would like to bring to the consideration of this committee the fact that the development of air conditioning today, together with all other features in the use of fuel, has brought us to the point where we can cut out every use of fuel in the whole District of Columbia and replace it by solely and exclusive electric heat at a lower cost than any building is now heated or in any way handled in the District of Columbia: in fact, we cannot only do it at a lower cost, but I am going to make a statement that I can prove: We can, if we choose, lay down the electric heat in the District of Columbia at no cost.

Mrs. JENCKES. Turn on a button and take it out of the air?

Mr. NEWBERT. Just as easy, and you will not have any electric-light bills. We can do it in this manner; and that will cover the vicinity that includes Baltimore and Washington, which are only 40 miles apart.

Mrs. JENCKES. Mr. Newbert, please keep your remarks strictly to the District, because we have a lot of people and we are anxious to get through.

Mr. NEWBERT. If I have no time, perhaps I could put something in the record.

Mrs. JENCKES. And make your statement, and then we will include whatever else you desire in the record.

Mr. NEWBERT. I want to give you an idea how it can be done, simply by putting a gigantic electrical development plant in between Baltimore and Washington that shall use the byproducts from fuel and make out of the byproducts what will enable the electricity to be furnished for nothing, if you choose to do it. It can be done with the present development of science of engineering, and you can make this city as well as Baltimore and, finally, Pittsburgh—any city in the United States—

Mrs. JENCKES. You give us that in writing.

Mr. WOOD. I suggest that we hear him, but that he confine his remarks to the bill.

Mr. NEWBERT. I am not either for or against, but let us do something worthwhile.

Mrs. JENCKES. Mr. Newbert is about a hundred years ahead of his time.

Mr. NEWBERT. No; not 100 years ahead of my time.

Mrs. JENCKES. We are very much interested.

Mr. JAMES L. QUINN. I believe the committee will be glad to investigate this proposition, but we are awfully crowded for time.

Mr. NEWBERT. Any time in the next 24 hours you can have my services available, if you will let me have a few days' notice ahead.

Mrs. JENCKES. Are you staying in the District?

Mr. NEWBERT. At the present time. I used to be in New York City. I want to make those outstanding statements and I can prove them.

Mrs. JENCKES. Thank you very much. Mr. Sullivan do you want to be heard now?

**STATEMENT OF GEORGE E. SULLIVAN, ATTORNEY AT LAW,
WASHINGTON, D. C., REPRESENTING THE CITIZENS' ASSOCIATION OF TAKOMA PARK, D. C.**

Mr. SULLIVAN. Very briefly, if you please.

Mrs. JENCKES. State your full name and whom you represent for the record.

Mr. SULLIVAN. My name is George E. Sullivan, representing the Citizens' Association of Takoma Park, D. C., and also a delegate from that association to the Federation of Citizens Associations.

Mr. JAMES L. QUINN. You are one of the federation delegates?

Mr. SULLIVAN. That is right.

Mr. JAMES L. QUINN. Are you any relation to Mrs. Sullivan who spoke a few moments ago?

Mr. SULLIVAN. Not at all: on this particular matter we do not agree at all.

This association and also myself as a delegate to the federation really take the position that neither of these bills make any step in advance but endanger a backward step in the accomplishment of what we all want, namely smoke elimination in the District of Columbia.

Mr. Quinn's views are practically identical with the views of the association I represent and with my views and the views of a great many other delegates to the federation.

Mr. WOOD. That does not coincide with Mrs. Sullivan's views.

Mr. SULLIVAN. Not at all.

Mr. JAMES L. QUINN. You admit they do not agree?

Mr. SULLIVAN. Yes.

Mr. WOOD. You are delegates to the same federation?

Mr. SULLIVAN. We are delegates to the same federation.

Mr. WOOD. Are you both authorized representatives of the federation?

Mr. SULLIVAN. I should not say I am speaking for the federation.

Mr. WOOD. What I would like to know is which one of you is speaking for this federation.

Mr. SULLIVAN. I can make that clear to you. Mrs. Sullivan is speaking in a way temporarily for the federation. The federation, however, had a meeting week before last in which it was stated that this matter would be apt to come up before your committee prior to the time we could have another meeting of the federation. So, without the federation considering what should be done, they authorized the committee to give it study and to appear before the committee with power to act. It happened that there was not a meeting of this committee during that interim, and we had another meeting last Saturday. So the matter was brought up before the federation. I offered a resolution dealing with exactly what I am advocating and what Mr. Quinn is advocating here. It was seconded and someone raised the question of no quorum. So it is still pending and not acted on by the federation.

Mr. WOOD. The bill was introduced 2 months ago?

Mr. SULLIVAN. That is right.

Mr. WOOD. How does it happen your federation has not got together in 2 months?

Mr. SULLIVAN. It had not been called to its attention by its committee. The federation usually acts upon committee reference and gives the committees time. The committees have a great many subjects to study and the committee had not brought it into the federation until about 10 days ago.

Mr. WOOD. Then, according to your position, you are not representing the federation; you are just representing your personal views?

Mr. SULLIVAN. I should say that is correct as to the federation, in essence, as to that situation. I do represent officially the Citizens Association of Takoma Park, D. C., and under the constitution of the federation—

Mr. WOOD (interposing). Is this association one of the group that belongs to the federation?

Mr. SULLIVAN. It is one of the groups that belongs to the federation, but the constitution provides that each association is independent and each association can act independently, regardless of any vote—

Mr. WOOD. Mrs. Sullivan has been directed by a number of committees representing a number of groups to come here and represent them and you are just representing your group?

Mr. SULLIVAN. I am just representing my group, and the federation itself has not considered this matter and has not passed its deliberate judgment on it; that is the situation as accurately as I can state it.

Let me suggest this in view of what Mr. Quinn said: The District Commissioners' bill brings in this boiler inspector's proposition, which seems to be entirely separate and independent from this matter.

The Roberts' bill brings in two items that are absolutely independent of this matter: obnoxious gases, and so forth, which are covered by another section of existing law.

Mr. WOOD. That is not in this bill you are speaking of?

Mr. SULLIVAN. Yes; he attempts to cover that in his bill.

Mr. WOOD. I am talking about this bill you are speaking on.

Mr. SULLIVAN. That is the one I am talking about. That brings in obnoxious gases and dust, which are already taken care of. All we should deal with here is smoke; and, instead of getting somewhere progressively and dealing exclusively with smoke, he puts in the words "unnecessary smoke." Here is the result of that: Congress declares itself only against unnecessary smoke. Our original smoke law, which is now in effect, was passed in 1899; and those who were violating the law and brought into court claimed in court that the real construction of that act should be that Congress was only prohibiting "unnecessary smoke."

Mr. WOOD. Right there: You say enacted legislation against "unnecessary smoke"?

Mr. SULLIVAN. The violators sought to so limit the law, but our Court of Appeals held otherwise.

Mr. WOOD. The Supreme Court passed on that?

Mr. SULLIVAN. The court of appeals held that Congress was within its rights by declaring any emission of dense black, or gray smoke,

which is the definition in the act, as in violation of law; that if it required them to limit themselves to particular kinds of fuel or limit themselves to particular kinds of apparatus, or limit themselves to particular kinds of management, that was all their funeral.

Mr. WOOD. That is all right; but we are dealing with the necessary or unnecessary smoke. Congress cannot legislate logically or constitutionally or reasonably against necessary smoke, because who is going to be able to prevent necessary smoke?

Mr. SULLIVAN. The point I wanted to make is that the court of appeals makes the point that the meaning of "necessary" or "unnecessary" should not be left to controversy in each case that comes up in the case of each offender; that Congress should define the kind of smoke, as it does in this act, "dense black, or gray" smoke; and when Congress declares that an emission of it is a violation of law, they cannot come in and plead an alibi as to the kind of equipment or the kind of fuel. In fact, the court of appeals went so far as to declare the Public Printer was liable for violation of the act.

So that we now have a perfectly valid act; perfectly reasonable, too, because all experts agree that the emission of "dense black, or gray smoke" in this day and generation is absolutely unreasonable to the person using the fuel, because he is wasting his fuel if they do either one of two things: If they do have "unnecessary smoke" declared as a test in this bill and stop there; or have it there and have a further provision, as Mrs. Sullivan recommends, that the Commissioners may prescribe from time to time what is "unnecessary smoke"—we always go back to the test to be tried out in the courts of whether the regulation is in accordance with the acts of Congress; whether it really does prohibit "unnecessary smoke" only or whether it goes further than that—the net result is that you have a law which is really and truly unenforceable.

Now, to make real progress in this matter——

Mr. HENRY I. QUINN. In that question, may I ask Mr. Sullivan, we have also the difficulty of whether the Commissioners can define a crime, especially one applicable to Government buildings and Federal buildings?

Mr. SULLIVAN. That is a very serious question in addition. We have a law now; all it needs is enforcement by the proper number of inspectors, categorically to cover tugboats and locomotives, with proper provisions as to the locomotive engineer and firemen, and which will also cover buildings used for private residence.

Mrs. JENCKES. Thank you.

Mr. SULLIVAN. I have also a resolution adopted by the association I represent, and also a copy of the resolution offered before the Federation last Saturday and which is still pending before the Federation.

Mrs. JENCKES. And the other is embodied in that?

Mr. SULLIVAN. Yes, ma'am.

Mr. WOOD. What is your profession?

Mr. SULLIVAN. I am a lawyer practicing in the District of Columbia.

Mr. WOOD. You are unalterably opposed to this bill?

Mr. SULLIVAN. I think both bills are inclined to make the reverse of progress.

Mr. WOOD. You are opposed to these bills?

Mr. SULLIVAN. I am.

(The resolutions submitted by Mr. Sullivan are as follows:)

RESOLUTION ADOPTED FEBRUARY 4, 1935, BY CITIZENS' ASSOCIATION OF TAKOMA, D. C.

FEBRUARY 4, 1935.

To the Citizens' Association of Takoma, D. C.:

Your committee recommends the adoption by the association of the following resolution:

Whereas by act of Congress passed February 2, 1899 (30 Stat. 812), it was sought to prevent the emission of dense or thick black or gray smoke or cinders from any smokestack or chimney in the District of Columbia, provided such smokestack or chimney be used in connection with a stationary engine, steam boiler, or furnace, and with the further proviso that the prohibition should not apply to chimneys of buildings used exclusively for private residences; and

Whereas no good reason exists for continuing in force either of the aforementioned provisos, the emission of dense or thick black or gray smoke or cinders from any smokestack or chimney, whether of a locomotive engine, steamboat, or tug, private residence, or otherwise, involving an inexcusable waste of fuel, as also a public nuisance; and

Whereas a special committee appointed by the Commissioners of the District of Columbia and headed by Captain Clark, Assistant Engineer Commissioner, is now considering a draft of proposed legislation to remove both of the aforementioned provisos from the existing smoke-prevention law in the District of Columbia: Now, therefore, be it

Resolved by the Citizens' Association of Takoma, D. C., That it hereby urges, upon the Congress of the United States the need for early amendment of the District of Columbia smoke-prevention law so as to make the same apply to all smokestacks or chimneys, whether of moving or stationary engines, boats, or other vehicles or appliances, or of buildings used for private residence, business, or other purposes; be it further

Resolved, That copies of this resolution be transmitted to the Senate and House District Committees of Congress, the Board of District Commissioners, the corporation counsel, Captain Clark, Assistant Engineer Commissioner, the Federation of Citizens' Associations, and Mrs. Mahlon Pitney (1763 R Street N.W.), in charge of Dupont Circle Citizens' Association's pending drive against the smoke nuisance.

LAW AND LEGISLATION COMMITTEE,
By GEO. E. SULLIVAN, *Chairman.*

PENDING RESOLUTION BEFORE FEDERATION OF CITIZENS' ASSOCIATIONS, DISTRICT OF COLUMBIA, OFFERED APRIL 13, 1935, BY DELEGATE GEORGE E. SULLIVAN

APRIL 13, 1935.

Be it resolved by the Federation of Citizens' Associations of the District of Columbia, That it hereby urges the early strengthening of the District of Columbia Smoke Prevention Act of February 2, 1899, in the three following respects:

1. By amending section 1 thereof to read:

"The emission of dense or thick black or gray smoke or cinders from any smokestack or chimney used in connection with any engine, steam boiler, or furnace of any description, stationary or movable, within the District of Columbia shall be deemed, and is hereby declared, to be a public nuisance."

2. By amending section 2 thereof to read:

"Section 2. The owner, agent, servant, lessee, or occupant having, or participating in, any management or control over any such engine, steam boiler, or furnace, or any such smokestack or chimney used in connection therewith, or any building containing any such smokestack or chimney, from which there shall issue or be emitted thick or dense black or gray smoke or cinders within the District of Columbia shall be deemed and held guilty of creating a public nuisance and of violating the provisions of this chapter, whether such building, smokestack, chimney, engine, boiler, or furnace be owned, operated or used for public, quasi-public, or private purposes."

3. By providing an adequate number of inspectors or other prosecuting officers to enable efficient enforcement of the District of Columbia Smoke Prevention Act as so amended.

Be it further resolved, That copies of this resolution be sent to the Senate and House District Committees of Congress, the Commissioners of the District of Columbia, the Corporation Counsel, and the People's Counsel.

Mrs. JENCKES. We will next call upon Dr. R. R. Sayre in the United States Public Health Service.

STATEMENT OF DR. R. R. SAYERS, UNITED STATES PUBLIC HEALTH SERVICE, WASHINGTON, D. C.

Mrs. JENCKES. Doctor, you have read the bills, have you not?

Dr. SAYERS. Yes, Madam Chairman, glanced through them. I saw both this morning—saw H. R. 6232 first this morning; H. R. 7204 I had seen earlier.

Mrs. JENCKES. This bill providing for inspection?

Dr. SAYERS. Yes; I had seen that earlier.

Mrs. JENCKES. Will you give us a little bit of the result of your thought upon these bills?

Dr. SAYERS. I really think on account of the short time you have available that my statements, with your permission, had better be made as an extension in your record rather than to undertake an extended statement here.

In general, I concur with the statement made by Mr. Hood. Mr. Hood and myself have been associated at the Bureau of Mines, to which I was detailed for a number of years, and I am well acquainted with his work, and he is acquainted with my work in the Public Health Service.

Congress, a number of years ago, as you know, appropriated some money to the Public Health Service to make studies in a number of the principal cities of the United States. Those studies have been made but are incomplete, due to the fact that we had to practice economy necessarily in our funds, and therefore had to stop. We are writing up the results and they should be available in the very near future. We have made a review of the literature that is available, and I will give that in the record here for your benefit.

We, up to the present time, have not found a definite relation between the smokiness of the air of cities in the United States and the health of the people in those cities. The United States Public Health Service is, however, interested in the abatement of smoke in the atmosphere, since it is evident that this is desirable from every point of view, and it is very possible that smoke may have a direct or an indirect effect upon health.

I do not know whether I need to go into tonnages, et cetera, or not?

Mrs. JENCKES. I think not. If you will make this extension of your remarks, and then we will try to get it printed so that if anyone afterward wants it they can call at the office of the committee and we will have the reports ready for them.

(The following statement was submitted by Dr. Sayers:)

EXTENSION OF DR. SAYERS' REMARKS

The losses due to smoke may be classified in the following order:

Economic losses due to imperfect combustion of fuels; extra expense of cleaning clothes; losses due to disfigurement of residences, office buildings, and factories (repainting, etc.); losses due to soiled merchandise in stores; injuries to grass, shrubs, and trees on streets and in the parks; loss of daylight and ultraviolet light; possible injurious effects on health.

Many estimates have been made of the losses due to these various causes, but the most thorough and consistent that we have are those made by the Mellon Institute of Pittsburgh in 1913, when the population of Pittsburgh was about 550,000 or of about the same size as the present size of Washington. The actual losses expressed in dollars will vary with the price of coal, the cost of labor, etc., but an idea of the relative loss may be obtained from the following estimate:

It was estimated that in the proper stoking of furnaces 21.7 percent of the fuel could be saved (see O'Connor, Mellon Institute, Smoke Investigation Bulletin No. 4), and that the loss due to imperfect combustion in Pittsburgh at that time was \$1,520,000 during the year, or a loss for each man, woman, and child, due to incomplete combustion, of about \$2.80 per person per year.

Although the loss due to the improper design of furnaces and inefficient stoking will vary with the price of coal and the cost of labor, the loss at the present time in Washington is probably not less than this amount.

Mr. O'Connor also estimated that the extra expense, due to smoke, of cleaning clothes, laundry, and dry-cleaning bills in Pittsburgh, in 1913, was about \$2,250,000, or \$4.10 a person.

The estimated expense due to the necessity of repairing residences due to the soiling by smoke, such as repainting, repapering, and replacing hangings, was \$1,240,000, or \$2.26 per person per year.

He reported that in Pittsburgh in 1913 the estimated loss due to merchandise in the stores being soiled or ruined by smoke was \$1,650,000, or a loss of \$3 per person per year.

A smoky atmosphere also means loss of daylight and increased lighting bills.

The sum of the losses from the four sources mentioned above is \$12.16 per person per year. Mr. O'Connor estimated that the total loss due to smoke in Pittsburgh during the year 1913 was \$10,000,000, or \$20 for every man, woman, and child. In surveys made in New York, Chicago, Salt Lake City, Boston, and Baltimore, the economic loss has been estimated at from \$10 to more than \$30 per person per year. (See Meller.)

Besides these losses, which affect our pocketbooks directly, the literature on the subject discussed the injury of smoke to plants, shrubs, and trees in our streets and in our parks. The deposit of soot on the leaves of plants interferes with their growth, plugging up the stomata or minute pores of the leaves by means of which they absorb carbon dioxide from the air, which they feed on, converting it into sugars, starches, and the carbohydrates. The soot also coats the leaves and reduces the amount of sunlight reaching them, and in this manner slows down the rate of growth of the plant. Plants cannot grow without sunlight. Experiments carried on at Leeds, England, have shown a direct effect of smoke upon the growth of plants, the growth of lettuce, for instance, in a very smoky district being only one-fourth of that in a clear district. (See Cohen and Ruston. *Smoke, a Study of Town Air*, pp. 23-33.)

One of the effects of a smoky atmosphere is the loss of daylight and of ultraviolet light due to the smoke. Smoke in the atmosphere, absorbs the ultraviolet light coming from the sun and the sky. Various investigators have shown that both daylight and ultraviolet light are absorbed by smoke. The health department of the city of Baltimore found from 1926 to 1928 that the amount of ultraviolet light in Baltimore was 50 percent greater in the country than in the city due to the absence of smoke. (See Shrader, Coblentz, and Korff. *American Journal of Public Health*, July 1929.) The department of health in Chicago found losses of from 51 to 43 percent of the ultraviolet light in Chicago on smoky days. (See Tonney, Heeft, and Sommers. *Journal of Preventive Medicine*, March 1930.) H. H. Kimball during the Mellon Institute Survey found the ultraviolet light to be 60 percent less in Pittsburgh than in Sewickley, a small residential town 12 miles to the northwest of Pittsburgh. (See H. H. Kimball, Mellon Institute, *Smoke Investigation, Bulletin No. 5*.) The United States Public Health Service found in New York in 1927 an average loss throughout the year of 21.5 percent of the daylight, due to smoke. On some days the loss was greater than 50 percent. In Baltimore they found the average loss of daylight during the year 1929-30 to be 14.1 percent. On some days the loss was greater than 50 percent. (See *Public Health Bulletin No. 197* and *Public Health Reports*, February 3, 1933.)

The pollution of the air in Washington is not as bad as in some other American cities, but the United States Public Health Service found during the years 1932 to 1933 that as much as 296 tons of smoke and dust were deposited per square mile per year in Washington at Seventh and B Streets, S.W., of which 154 tons were carbon and 142 tons were ash. Some figures on the amount of dust deposited per square mile per year in some other American cities and in some foreign cities are given in the accompanying tables I and II. It will be noted that although the amount of dust deposited per square mile per year in Washington is not as great as in some cities, both in this country and abroad, it is a large amount.

Mr. JAMES L. QUINN. Just one question, Doctor: Your department does not have sufficient money; is that right?

Dr. SAYERS. That is correct.

Mr. JAMES L. QUINN. Do you know of any agency in the District in connection with its governmental functions that has sufficient money?

Dr. SAYERS. I am in the United States Public Health Service and we made this study at the request of Congress. Congress appropriated some money a number of years ago for us to make this study in 14 of our principal cities. We carried out part of that study and we are making a report on the data that we have obtained.

Mr. JAMES L. QUINN. You ought to ask for more money; everybody else is.

Mr. WOOD. Do you appear in favor of or in opposition to this bill?

Dr. SAYERS. I am not here on any side so far as the bills are concerned; I am not here to do that. I am here to give you any information we have; that is my duty.

Mrs. JENCKES. You prepare that report and send it in, Dr. Sayers, and then we will have the report of our meetings printed and those who want them will be able to get them. We are very grateful for your coming.

Mr. JAMES L. QUINN. One more question, Madam Chairman, please. Doctor, in conclusion, Mr. Hood, of the Bureau of Mines, suggested in line with his job—and I know you have had experience, too, and will go along and cooperate on this thing, coordinating any set-up your agency and his may determine in connection with the District government in eliminating this problem?

Dr. SAYERS. Congress passed a law a number of years ago authorizing the United States Public Health Service to do this, so that all they need to do is to make request of the Surgeon General and the Surgeon General can assign any of his personnel that are available to the assistance of the District or any governmental organization.

Mrs. JENCKES. Thank you very much, Doctor. Dr. Sayers is a busy man, and I happen to know he left one engagement to come here.

We will now call upon Mr. John Coyne, chairman board of trustees, International Union of Operating Engineers.

STATEMENT OF JOHN P. COYNE, CHAIRMAN BOARD OF TRUSTEES INTERNATIONAL UNION OF OPERATING ENGINEERS

Mr. COYNE. Madam Chairman, it seems you are pressed for time, and, if permissible, I shall make a brief statement and hand a copy of our brief to the reporter to include in the record.

Mrs. JENCKES. That will be splendid, Mr. Coyne.

Mr. COYNE. I am presenting this brief which has been prepared by authorized representatives of Hoisting, Portable, and Power Shovel Local No. 67; Stationary Engineers' Local No. 99; School Engineers' (Colored) Local Union No. 104, all of whom are members of the International Union of Operating Engineers and the Universal Craftsmen Council of Engineers, No. 22.

We are opposed to both these bills on general principles—to 7204, for the reason we believe safety inspection stands apart from smoke abatement. We are of the unanimous opinion that smoke nuisance in Washington should be remedied, but we are aware, due to our experience in operation, that it cannot be done immediately; it is going to take some time. We are encouraged by the statement made by Mr. Hood, of the Bureau of Mines, and believe his recommendations and comments fully cover this subject.

Further, we are opposed to bill 7204, because of its various ramifications; for instance, it provides that inspection by insurance companies be accepted in lieu of inspection by the boiler inspector of the District of Columbia and the grant of a period of 30 days during which reports of inspection may be filed.

We are opposed to the language of section 7, page 4. The word "reconstruct", as used in the proposed measure bears too broad and general a meaning. This word might be interpreted to permit the repair of more than 50 percent of the steam boilers now in use in the District, which would be in conflict with the code of the American Society of Mechanical Engineers, adopted by the Commissioners of the District of Columbia, on August 6, 1924. The code, which is a part of the regulations of the District, requires new boilers under conditions which are included within the meaning of the word "reconstruct" in the measure now before this committee.

We are opposed to that section of the measure which authorizes the District Commissioners or advisory board to make rules and regulations, particularly since the scope of these regulations is not defined. It is of little satisfaction for the average home owner to know that he has recourse against penalties in the courts. Court actions are costly and under the provisions of this bill they might be sufficiently high to overbalance the total value of his home.

Mr. JAMES L. QUINN. Do you represent the steam-shovel engineers?

Mr. COYNE. All operating engineers.

Mr. JAMES L. QUINN. The steam-shovel men?

Mr. COYNE. The steam-shovel men and all operating engineers, except locomotive.

Mr. JAMES L. QUINN. You represent the steam-shovel engineers?

Mr. COYNE. The steam-shovel engineers and marine engineers.

Mr. JAMES L. QUINN. They are the worst offenders?

Mr. COYNE. They are very bad offenders.

Mr. JAMES L. QUINN. Possibly the worst? Why?

Mr. COYNE. For the same reason as that cited in the case of the locomotive, except that the railroad companies have made some effort to provide appliances for their boilers which would limit the amount of smoke which may be emitted. The same type of boiler used on a locomotive is also used on a steam shovel, but the manufacturers of steam shovels and the contractors who buy them have never made any demands that appliances be installed on boilers to lessen the amount of smoke emitted.

Mr. JAMES L. QUINN. You use coal as fuel?

Mr. COYNE. Usually. Of course, we have power shovels—electric, compressed air, and gas, and internal combustion engines; the steam boiler is fast going out of existence so far as the shovel is concerned.

Mr. WOOD. What is your organization's position regarding the employment of more inspectors in the District?

Mr. COYNE. The record of safety inspection in the District so far as boilers are concerned is probably as favorable as in any other city in the country.

Mr. WOOD. The fact of the matter is that most of the inspections are left to the insurance companies, is it not?

Mr. COYNE. No; that is not true in the District, I believe.

Mr. WOOD. There are more insurance inspectors than city inspectors?

Mr. COYNE. Yes, indeed.

Mr. WOOD. A great many more?

Mr. COYNE. Yes.

Mr. WOOD. You ought not to depend on insurance companies for our inspectors?

Mr. COYNE. No; not at all. We protest continuously against the provision for inspection by insurance company inspectors rather than by the District inspector.

Mr. JAMES L. QUINN. Have you in recent years had any accidents in the way of boiler explosions?

Mr. COYNE. No; I have been informed by persons who have worked in the District for some time that there have been no major boiler explosions since back in the fifties.

Mr. JAMES L. QUINN. Then, boiler inspection and all that, as functioning at present, is satisfactory?

Mr. COYNE. It is evident, in talking with residents of the District, that they are satisfied with the present method of inspection, but they state improvements could be made, which are not provided in any of this proposed legislation.

Mr. JAMES L. QUINN. Your men are directly interested because closely affected and their lives are in greater jeopardy than any other persons?

Mr. COYNE. The safety of the public depends upon efficiently operated plants.

Mr. JAMES L. QUINN. And, therefore, safety?

Mr. COYNE. Safety as well.

Mr. JAMES L. QUINN. Are they satisfied with the present set-up for boiler inspection?

Mr. COYNE. They do say there is room for improvement.

Mr. JAMES L. QUINN. Everything can be improved.

Mr. COYNE. By proper attention and effort.

Mr. JAMES L. QUINN. How do your members feel about it?

Mr. COYNE. They do not believe this proposed law is going to help—they believe the present law, unless improved, should be left as it is.

Mr. WOOD. Is there any objection to the firemen's license laws?

Mr. COYNE. Only to the extent that firemen, after passing proper examination, would be allowed to hold positions at present held by engineers who now supervise the work of firemen. We do feel that firemen should be licensed, as many cases have come to our attention where incompetent men are employed in apartment houses and small hotels in the district; these men should be replaced by others who know what they are doing.

Mr. WOOD. Very frequently the janitor fires those boilers?

Mr. COYNE. Quite often.

Mr. WOOD. And the janitor often knows nothing about the machinery at all?

Mr. COYNE. He often does not know the danger he is in, himself. The change in set-up, as here proposed, would be a let-down from the requirements respecting the efficiency of operators particularly on boiler systems. This bill goes so far as to specify any boiler of less than 15 pounds pressure per square inch as a low-pressure boiler, which would not require a licensed operator. Lowering the standard of knowledge an operator must have to operate that boiler is not a step in the right direction.

Mr. WOOD. Really, the low-pressure boiler is about 4 pounds of steam, is it not?

Mr. COYNE. I do not know just what the requirements are now, but I do know those are the requirements in the proposed bill.

Mrs. JENCKES. Does anyone want to ask questions?

Mr. BOWIE. You just spoke about the present bill—7204, I think it is?

Mr. COYNE. That is right.

Mr. BOWIE. And stated that they have lowered the pressure to 15 pounds per square inch?

Mr. COYNE. Yes.

Mr. BOWIE. And at the present time your law does not provide any more than that does it?

Mr. COYNE. I do not know what the requirements of the present law are, but I do know they specify in this bill 15 pounds per square inch, and anything less than that would be considered a low-pressure boiler; I am not finding fault with them, but I am finding fault with the provision whereby a man who has not passed an examination as an operator may be placed in charge of such a boiler.

Mrs. JENCKES. Does anybody else want to ask any questions?

Mr. BOWIE. Another question by me: Do you consider that the smoke-abatement bill and the boiler bill should be considered together or should be divorced?

Mr. COYNE. I think they should be divorced.

Mr. BOWIE. In other words, the inspection of a boiler has nothing to do with smoke abatement?

Mr. COYNE. Boiler inspection comes under public safety and smoke abatement, in my opinion, comes under public health.

Mr. BOWIE. I will ask the chairman if I may be heard later on.

Mrs. JENCKES. Certainly; Mr. Chapman, of Massachusetts, has given a lot of time to the study of this subject and probably can give us some valuable information.

STATEMENT OF DAVID A. CHAPMAN, FORMER DIRECTOR OF SMOKE ABATEMENT FOR THE COMMONWEALTH OF MASSACHUSETTS, BOSTON, MASS.

Mr. CHAPMAN. My name is David A. Chapman, former director of Smoke Abatement Commission of the Commonwealth of Massachusetts. I do not want to inject myself into the local tempest; but being interested in smoke-abatement work for over 25 years and spending considerable time in our Capital City, I naturally, as combustion engineer, notice what is going on here. The remarks of Dr. Hood outline the cure so clearly that it will not be necessary for me to use much of your time.

As director for the Commonwealth of Massachusetts, the greatest menace I had to contend with in my work was the pressure from political lawyers in their effort to fix up violations and, failing this, their taking every opportunity to hamper my work.

The attorney who has just presented his argument for the residents of Washington is quite right in his statement that no court would uphold the Commissioners under the House bill 6232 or House bill 7204, because neither of these bills define any standard on which to base violations. I have here a bill, acts of 1910, chapter 651, and acts of 1930, chapter 380, of the Commonwealth of Massachusetts, the result of many years of study by such men as the late Prof. Edward M. Miller, of M. I. T., Mr. H. B. Mellor, of Mellon Institute of Pittsburgh, Dr. L. Vernon Briggs, of Boston, Prof. C. Harold Berry, of Harvard Engineering School, and my own modest activities.

In the Massachusetts law, the standards for smoke readings are well defined, and the director is given the power to approve all specifications of new and reconstructed boiler plants and approve the type of coal to be burned in same. If you give your director same latitude in this direction, he can clean up your smoke situation. No new boiler plant of over 100 horsepower should be installed without an underfeed type of mechanical stoker, and new buildings should be forced to put in incinerators to burn up rubbish, garbage, and waste products, as these materials should not be burned in the boiler. Heavy fines for smoke violators will be found ineffective, as it is a problem of education to make people "smoke conscious."

My method was to try to solve each violator's smoke troubles, give them suggestions on how to stop the nuisance with the equipment they had, and make clear to the owner the savings of his fuel dollar if he corrected the trouble.

If they failed to improve matters, I held a hearing—failing to impress them in this way, I issued an order to stop the nuisance. If the order was ignored, I took the case in court and prepared the case carefully, with the result that the division never lost a case in court. Unfortunately, however, my activities, in spite of the temperate manner in which the department was operated, finally resulted in the politicians putting through the 1933 legislature a bill to abolish the division. In 1934 the legislature recreated the division; but regardless of the character of the work which had been accomplished by the department under my regime, I was not given the appointment.

As Dr. Hood stated, smoke-abatement work is a special branch of combustion engineering, and a director of this work should have a thorough background of boiler performance, types of fuels, and their adaptability to the different boilers for smokeless operation. He should be a practical man, able to show property owners how to run their plants without smoke violations, and have the patience to instruct engineers and firemen how to properly fire their boilers. By all means, see that the work of the director is an all-time job. No director of smoke-abatement work should be allowed to make this a part-time proposition.

It is my belief that the boiler-design section of your bill should be divorced from the smoke-abatement work; they are too diverse, and smoke abatement properly done will take a man's entire time. One of the speakers said it was impossible to tell about night violations of the smoke law, but this can be done by installation of an electric eye which is equipped with a graphic chart. Many of these were installed at my suggestion in metropolitan Boston, and one can quickly place the responsibility of a smoke violation with them. Dust-count apparatus and soot-fall tests are also valuable tools of smoke-abatement work in discovering the source of the nuisance.

Most any kind of fuel can be burned smokelessly if the proper furnace volume is provided, together with the right amount of air, turbulence, and temperature.

In one plant in metropolitan Boston I approved of the burning of straight tar, and no smoke or complaint of any kind has come from the operation of this plant, because the plans of the furnace included the necessary equipment to properly burn this material. Boston is said to be one of the cleanest cities in the country; yet in the heart of our city over 2,500 tons of unconsumed carbon have been found per square mile per year, and in some sections of metropolitan Boston figures of 14,000 tons per square mile have been found. In the Massachusetts law the feature whereby the public

has access to all records of smoke violators brought me more grief than any other part of the law. Salesmen for so-called "smoke-abatement" gadgets, oil burners, stokers, and so forth, would look over our records, as the law permitted this. Then they would bother the violators in their effort to sell their equipment, and this naturally kept our department in hot water all the time. Cut out this privilege of having the records open to the public; it is as pernicious as the famous pink slip. Gas and electricity are, of course, the Tiffany of fuels for maintaining clean air, but until the President's yardstick is nearer maturity than it now appears electric heating for the average person in Washington is out of the question, and gas costs are out of range with either bituminous or anthracite or coke for heating purposes. Smokeless results and low costs for heating and power can be best obtained by use of high-quality, low-volatile bituminous coals burned in proper equipment.

In metropolitan Boston, especially in our public garden or Boston Common, they have given up trying to grow successfully any type of coniferous tree: about 6 months is the life of such a tree, due to the effect of smoke. In time your beautiful white marble buildings will show the effect of smoke, and the shrubbery and foliage of your trees will suffer likewise.

Mrs. JENCKES. Would it be possible, Mr. Chapman, for you to get a copy of the bill or will Mrs. Pitney lend it to us in order to get it incorporated in the record?

Mr. CHAPMAN. I will be glad to see that copies of the bill are sent to the committee.

Mr. JAMES L. QUINN. Would you mind telling me what your profession is?

Mr. CHAPMAN. I am a combustion engineer and am now associated with a coal-mining concern.

Mr. JAMES L. QUINN. Acting independently?

Mr. CHAPMAN. I am assistant of the president in New England of a large coal company. In Washington prior to the World War I am quite sure that hard coal was the most common fuel used here, and in New York at that period there was similar restrictions except in plants that were equipped with mechanical stokers.

An intelligent director of smoke abatement work will draw up rules and regulations covering his work so that no burden is placed on any power plant, hotel, office building, or apartment house if he gets the cooperation of the public and support of the press a vast improvement can be made inside of 3 to 5 years in the condition of the air.

The suggestion in your bill of an advisory board to work in cooperation with the director is, in my judgment, a sound one and let me suggest the advisability of placing a high-class public-spirited

woman on this advisory board. The women folks, after all, have the work of cleaning up the mess caused by this nuisance and know the loss due to soiled curtains, walls, and so forth, and are much more "smoke conscious" than the men. A smoke-abatement director, had he any say in the appointment of an advisory board, would like to have a railroad man, hotel representative, an office-building owner, a representative of the local engineers' union, and a woman of the type I previously suggested to make up a balanced board.

Mr. PRETTYMAN. May I ask a question? When you spoke of lawyers did you mean lawyers in Boston who were connected with organizations fighting you against smoke eliminations?

Mr. CHAPMAN. Yes; in the defense of their clients, they would do everything possible to combat the activities of the department and to such an extreme did they work that they were largely responsible with the aid of the politicians to finally abolish the division.

Mrs. JENCKES. A good lawyer is one who fights for his clients, no matter what his client has done.

Mr. JAMES L. QUINN. Mr. Chapman says he never lost a smoke violation case in court. Did he practice a little law himself?

Mrs. JENCKES. We have yet 5 or 6 names on our list who have requested to speak either in approval or disapproval of these bills, and I hope we can get through by 1 o'clock. If anybody wants to leave because they are hungry, we are sorry, but I think the best thing we can do is to proceed, because tomorrow is our District Committee meeting and other things come up, so that we will have quite a number of things that interfere with our conclusion of this meeting.

We will next announce Mr. B. C. Wagner. Has he left?

STATEMENT OF Z. C. WAGONER, REPRESENTING APPALACHIAN COALS, INC.

Mr. WAGONER. Madam Chairman and committee members, I am representing the producers as recognized through the Appalachian Coals, Inc., and we as bituminous producers do endorse smoke-abatement work. I wish it had been possible to have a little more time, but I am going to make my remarks very brief.

For the benefit of all those here, I would like to reread the paper that our friend, O. P. Hood, presented. I think it was a very clear, concise, and unbiased statement of the use of fuel. I should like particularly to emphasize the statement that he made that all fuels can be properly burned; in other words, any known commercial fuel, if properly applied, can be burned without smoke. By the same token all those fuels, regardless of what they are, can be burned with smoke, according to the application; and therefore the personal element comes into that operation.

The economy of operation cannot be overlooked, and there must be no stipulation in any bill that would give the kind of fuel to be

used or specifications for particular burning equipment, except as between specific equipment for a particular fuel.

The two bills as presented do not cover the situation, because, first, they give too great authority to a commission providing penalties, but little provision for smoke-abatement education and inspection; and that in the last analyses is the one way to achieve smoke abatement—public education.

Second, the bill confuses—or the one bill—confuses boiler inspection and smoke abatement.

As an engineer, I would state that there is no relationship between smoke abatement and boiler inspection for safety.

According to the evidence as it is given, there seems to be an indication that there are at present smoke-abatement bills. There is a smoke-abatement law that, if enforced, would go a long way if coupled with an educational program properly sponsored and carried along by these civic organizations which unquestionably are doing a very good work in every community, and if they would lend educational aid throughout each of their districts and then try to have enforced the present smoke-abatement law I think we would go a long way toward achieving the end that everybody is after.

Thank you.

Mrs. JENCKES. Does anybody want to ask Mr. Wagner a question? If not, Mr. R. B. Swope will make the next statement.

STATEMENT OF R. B. SWOPE, ACTING CHAIRMAN INDUSTRIAL INTERESTS COMMITTEE, WASHINGTON BOARD OF TRADE

Mrs. JENCKES. Please state the position you occupy.

Mr. SWOPE. I am acting chairman of the industrial interests committee of the Washington Board of Trade.

In listening to the remarks of the previous persons who have appeared before the committee, it seems to me there is some confusion between the two elements considered in these bills—the question of safety measures and the question of smoke abatement.

In considering these two bills it was my understanding that safety was not the only thing to be considered by the set-up of the commission to administer H. R. 7204.

It was my understanding that the commission was to be set up to consider whether or not a boiler was properly designed or adequate for the job when applied to any installation. If that were done the question of smoke abatement would be largely solved by such a commission; and in addition, the elimination of the safety factors, the question of adequacy, and proper design of the boiler would be equally important factors, and that is certainly a large element in the question of smoke abatement.

At a meeting of the industrial interests committee of the Washington Board of Trade held on March 22, a subcommittee was appointed to consider the proposed antismoke laws on which hearings are being held today. At a later meeting this subcommittee compared proposed bills H. R. 6232 and H. R. 7204 and respectfully wish to express their preference for H. R. 7204.

Objections to H. R. 6232 are based on the fact that no specific provision is made for a properly qualified individual or commission to decide the question of "reasonable regulations for the installation and operation of combustion and all other devices." We consider that the maximum fine under that bill is greater than should be necessary, and finally that no provision is made for the designation of any specific individual or group of individuals to carry out the enforcement of the act. We believe that this proposed law, if enacted, would permit any employee of the District of Columbia to file a complaint without regard to his qualifications for doing so.

Compared to the present method of enforcement in the matter of excessive smoke by representatives of the health department, we believe the proposed H. R. 7204 provides a more satisfactory agency in the appointment of an inspector, serving under the office of the chief inspector of the District of Columbia, with necessary personnel and with recourse to a commission properly qualified to act on cases in controversy. We believe the addition of proper regulations to cover the inspection and approval of steam boilers and certain unfired pressure vessels may prove a safeguard to residents of the District and provide a check against the installation of faulty equipment, inadequate, or not properly designed for the job.

There are several objections we wish to register, however, to portions of H. R. 7204, which are as follows: Under section 9, page 5, line 9, after the word "vessels", we request the insertion of the following clause: "also excepting those containers covered by the specifications and inspection of any agency of the Federal Government." The reason for this request is to avoid a duplication of inspection required for a class of pressure containers not exempted by previous description under the proposed act, but which are used in very large quantity throughout the District of Columbia and are covered by the rigid specification and inspection of service of the Bureau of Explosives, an agency of the Interstate Commerce Commission. Such containers are used for transportation of the many compressed gases used industrially and otherwise, and any requirement for a permit for their use would involve hundreds of permits every day on containers which are thoroughly inspected by an existing agency. I believe you will also find that certain other containers are included in the same designation and if properly inspected by a recognized Government agency should require no duplicate inspection under this law.

Under section 13, we request the elimination of the words "or repair", on line 9 of page 7, and the insertion of the word "and" between "construction" and "installation" in line 8. This request is made in the belief that ordinary or minor repairs to boiler equipment should not require additional permit, and we do not consider it necessary that the inspection service extend its operation to every minor adjustment or repair job on boiler or other equipment once that equipment has been passed as adequate and properly designed for the work.

Under section 20, lines 13 and 14, we suggest the elimination of the following clause: "or to imprisonment for not more than 90 days,

or both." In consideration of the later clause that each and every violation is considered a separate offense, we believe that the maximum fine of \$100 is a sufficient deterrent to prevent willful violation under the act, particularly since violation in most cases would not be due to any criminal intent on the part of the offender.

An analysis of this bill shows that a net increase in cost for administration would amount to approximately \$8,500 per year—I understand the gross cost would be about \$25,000—and that the cost of administration would probably be provided largely from the fees paid for the inspection and permit service. The bill is worded to indicate a more cooperative form of law observance than the present regulations, and while we view with increasing apprehension the constant growth of Government agencies for the regulation and control of nearly every human activity, we believe, in view of the existing law, there might be justification for this revision.

MR. JAMES L. QUINN. Just a moment. Do you think there is cooperation between a boiler inspector and smoke elimination?

MR. SWOPE. I do.

MR. JAMES L. QUINN. Well, practically every State of the Union in their industrial code have very stringent laws for boiler inspection. They take a very exacting examination, and yet practically every city in the Union has a smoke-abatement problem, whereas the boiler inspector has nothing whatever to do with that. His proposition is to determine the tensile strength of the boiler, its construction, the condition of the safety valves and other devices pertaining to its safety. He need know nothing of combustion whatever to do very fine boiler inspecting; on the other hand, as you have heard testified by Mr. Hood of the Bureau of Mines, there were very few experts on smoke, which needs a different provision. There is no relationship whatever between the two. The very fact that your city or your State have set up a division of boiler inspection indicates there is no relationship to that, because it is purely a precautionary measure for safety, endangering life and property.

So, why this unique proposition here is beyond my comprehension. I cannot get the relationship. There is no relationship between the two in my mind, and I cannot find an expert who says there is relation.

MR. SWOPE. They should certainly be correlated.

MR. JAMES L. QUINN. The smoke abatement man should know something about combustion and about the proper type of boiler so far as pertains to combustion only. It has nothing to do with the boilers' capacity, for example, or radiation, heat, or anything of that kind.

MR. SWOPE. It is perfectly all right for us to disagree?

MR. JAMES L. QUINN. I accept your apology..

MR. CHAPMAN. All boilers in the United States are manufactured under very high standards set by the American Society of Mechanical Engineers. I do not know of one high-pressure boiler manufacturer that does otherwise.

MR. JAMES L. QUINN. From your wide experience, do you know of any coordination between boiler inspection and smoke abatement?

MR. CHAPMAN. No, but the gentleman who preceded me said the right thing, that the boiler inspection should be under public safety. The effect of a boiler explosion, if any of you have ever seen one,

it is so frightfully destructive of life that it should be under the Department of Public Safety. But this other thing, smoke abatement, in engineering is just as separate as a heart specialist would be from being a veterinarian.

Mr. JAMES L. QUINN. That is my interpretation. In industry the boiler inspectors have nothing to do with smoke abatement. We have a different type of men altogether for smoke elimination, but I think there is some coordination and abatement of smoke in my city.

Mr. CHAPMAN. I think your city has done more smoke abatement, and especially the Mellon Institute, than any agency in the country, outside of what is going on in England.

Mr. JAMES L. QUINN. Let me ask you something else. I understand this committee is in earnest in trying to get the right kind of man to function as an expert in eliminating smoke, and that is what they need, and sufficient money to put that over.

Mr. CHAPMAN. I spent \$60,000 the first year. I was located in the highest building, where public-spirited citizens contributed money to buy a \$2,000 telescope, the finest instrument that could be purchased for dust count and checking up on the filthy sections in our community, and I could spot stacks in metropolitan Boston covering 350 square miles, with a population of over 2,000,000, and it cost less than 2 cents per capita, and I feel I did a pretty good job. I discovered very soon that the trouble in Boston, being such an old city, and soft coal did not appear there until 1885; we used hard coal previous to that.

Mr. JAMES L. QUINN. You were awfully slow in getting to a good fuel?

Mr. CHAPMAN. I discovered that furnace volume was the main trouble; they lacked the proper furnace volume, and you have to be patient with engineers. We gave a violator a hearing, and if he didn't take good, sound advice, which didn't cost him anything, then we issued an order; and if he violated that order, by this law, which I am going to send you a copy of, we hailed him into court, and, as I say, I never lost a case. My reference to the lawyers was this—not saying anything deprecating to the practice of the law—the lawyers would take as clients owners of real-estate property and would harass me at every turn.

Mr. JAMES L. QUINN. They were not lawyers, they were attorneys.

Mr. CHAPMAN. That is the point I want to bring out. Now, we breathe 35 pounds of air each 24 hours and only eat 6 pounds of food and water. So you can see how important from a health standpoint smoke and dust abatement is.

Mr. JAMES L. QUINN. As an engineer—and I am giving you credit with being thoroughly honest—we should give them a law with teeth in it and some such high type of man, and appliances and cooperators in mutual operations, and they should get out a campaign for education; is not that the story?

Mr. CHAPMAN. If you do not, the women will be on your tail. I used to have 5,000 women in the room—5,000 was the average-sized attendance on my hearings—and an engineer who will instruct firemen and engineers. I used to work nights, holidays, and Sundays instructing engineers and firemen, who were all glad and willing to cooperate, because they could save money. This smoke abatement is

economy. You will never find any smoke from plants of the big corporations; it is a big item of wasteful expenditure and it interferes with paying dividends.

Mr. JAMES L. QUINN. You have had some experience with civic organizations?

Mr. CHAPMAN. Plenty.

Mr. JAMES L. QUINN. The only thing two of them agree on is what the third should do?

Mr. CHAPMAN. Exactly, but if you clean the smoke up they will be the best of friends. It means a 5-cent bar of soap additionally each month so far as smoke nuisance and as far as health matters are concerned. I am not going to delve into the medical profession, but I have read considerable of the printed matter and interviewed several prominent doctors, who feel it has a very essential part in our longevity if we keep the lungs clean. As a matter of fact, the most prominent doctor in the country says he can tell lungs from post mortem from the lung tissue, the color of it being black if he lives in certain cities—I will not mention the cities [laughter]. I am afraid of Joe Guffey.

Mr. JAMES L. QUINN. You are a platinum blonde, and I like that up to a certain point.

Mr. CHAPMAN. Well, I didn't go beyond the point.

Mr. JAMES L. QUINN. May I ask this gentleman to substantiate his statement that bituminous coal with proper equipment can be burned smokeless?

Mr. CHAPMAN. Positively. I told you earlier that I permitted eight barrels of tar to be burned within 800 feet of the City Hall, and no one ever saw the smoke. It is simply a question of proper equipment and volume of furnace. Mr. Hood very kindly has sent his experts. Dr. Butt did send men to Boston and I could not get the check on it in 2 years. I have not had it here.

Mrs. JENCKES. He is going to give it to us. We will next call on Mr. Jones.

STATEMENT OF THOMAS H. JONES, CHERRYDALE, VA.

Mr. JONES. My name is Thomas H. Jones and my address is 33 Linden Avenue, Cherrydale, Va.

I represent the Columbia Council of Engineers and am also associated with the international organization, Universal Craftsmen Council of Engineers here, and we have jointly submitted a brief, and it is our opinion, in fact, we know it, that the smoke abatement and the boiler inspection activities should be separated. They never should be connected with one another in any way.

I have been an engineer in this city for a great many years. I served over 11 years in the District Government and other places and I have been fined also for making smoke. I will put that statement in there. And I believe the present smoke abatement law if properly enforced by intelligent inspectors would give us one of the cleanest cities in the United States today.

I want to tell you of an experience I had with one of your smoke inspectors. Some years ago he came into my engine room and requested that I burn ashes. You know how ridiculous that is. Now,

this was the smoke inspector. I ridiculed him, and he wanted me to go some place where they were burning ashes. All you people here, whether engineers or not, know it is impossible to burn ashes. He got so riled over my ridiculing him that immediately he went out and he put a watch on my stack and I commenced to get some fines.

That is one class of inspectors. I do not know about your inspectors today, but that was one of your District smoke inspectors, a man out like that to enforce the law, who claims that you can burn ashes.

Another thing, we are in favor of smoke abatement, and as it has been stated, with intelligent men handling the coal you can abate smoke to a very great extent. I do not know as you could eliminate it in all cases, because in my travels around this town—and I will give you a reason for a good bit of your smoke right here: I find plants which have put in a hundred-horsepower boiler which was large enough at the time it was put in, but their business had grown to the extent of double the capacity, and yet they compelled the engineer to force that boiler to the extent of doing double the work, and that makes smoke. That is one of your troubles.

Mrs. JENCKES. That would come in under the boiler inspection, really?

Mr. JONES. Yes.

Mrs. JENCKES. That would be, perhaps, the connecting link?

Mr. JONES. Now, as to boiler inspection: We have here a fee system and it has been in existence for years, and I do not remember but one really serious explosion in a high-pressure plant in my time in the District of Columbia, and that was down at Fourteenth and D Streets—on Constitution Avenue now—which happened before a good many in this room were born. That is the only high-pressure plant I know of where we had an explosion since the boiler inspection law has been in effect.

Mr. WOOD. What about the explosion in the McCrory 5-and-10-cent store on Seventh Street in 1931?

Mr. JONES. That was not inspected by our inspectors. That was one of the low-pressure plants which the bill is trying to put out of the charge of the engineers. That plant had no inspection at all. I am glad you brought that up.

The present law says 15,000, as proposed here. Our present law says a low-pressure plant is one where the returns come back without assisting appliances; or in other words, come back to the boiler without any pump, trap, or anything intervening. That is the old law, which is a good definition for a low-pressure plant.

Mr. WOOD. This bill, if enacted, would seriously affect the present law?

Mr. JONES. It would entirely repeal the law; and another thing, it would be very dangerous, because the minute you put an obstruction in your return to your boiler your water is going out all the time; and as an illustration of how accidents happen in a good many low-pressure plants like that, the water goes out and fills up the heating system; your boiler gets red hot, and you have an ignorant fireman, not under the control of an engineer; and the fireman comes there and sees no water, and not knowing the consequence, he immediately goes to work and opens up the cold-water line and puts cold water on the hot plates. That generates an immense quantity of steam, and an explosion takes place. That is the way most of the explosions occur.

So we are opposed to any change in the present set-up of the boiler-inspection law.

I have right here a clipping out of a paper. Last month, coming up from Florida, I stopped in this town; and on the day before, March 27, the accident occurred, and this says, "Mrs. Bathrop will be buried today." This was at Battleboro, N. C. That lady was killed by a tank, which everybody would say was perfectly safe. It was just a little water-pressure tank, with water in it and air on top, being pumped in there, and the pressure transports the water through your house. It was an old tank and killed that lady. There is the record of it right there [submitting clipping to the committee].

That demonstrates how carefully you have to be about these appliances, low pressure or high pressure, and I believe if you leave our laws as they are, give the Commissioners more help—which means more money—to enforce the present law, that you do not need any change at all one way or the other.

Maybe you do not know how stringent the smoke law is at the present time. I do not know how many hundreds of notices I have received where I had made smoke for twenty-five one-hundredths of a minute, or 15 seconds, and for fifty one-hundredths of a minute, or 30 seconds. And if you made smoke for 1 minute you were fined.

Your present set-up here for using this screen, the way I understand it, whereby they are going to give them the privilege of making smoke for 15 minutes in an hour, cumulative; that is, you might make smoke for 5 minutes, then for 3 minutes, and then for 7 minutes, and so on.

As I say, our present law, if enforced with intelligent help—we would have one of the cleanest cities in the United States, and I am going to recommend that you do not make any change in our present set-up of safety.

Mrs. JENCKES. What do you think of the amendment or change Mr. Quinn suggested to section 61, paragraph 1, making it read, "Chimneys used in connection with any stationary engine"? Would you put in that word "stationary" or would you let it go as "chimneys used for any engine"?

Mr. JONES. If this bill here——

Mrs. JENCKES (interposing). I am not talking about this bill; I am talking about what is in the code.

Mr. JONES. Make it apply to locomotives?

Mrs. JENCKES. Make it apply to locomotives and also take in the chimneys in our homes.

Mr. JONES. I think that ought to be covered in the bill.

Mrs. JENCKES. In other words, you would be for Mr. Quinn's amendment?

Mr. JONES. I would; yes.

Mrs. JENCKES. Thank you very much, Mr. Jones.

Mr. JAMES L. QUINN. How many smoke inspectors do you have here?

Mr. JONES. They used to have one, when the inspector wanted me to burn ashes.

Dr. BUTTS. We have 2 detailed and sometimes 6 and all detailed under the law.

Mrs. JENCKES. Where do you spend your time?

Dr. BUTTS. Out observing various plants. But one or two men cannot handle over 2,000 plants at the present time.

Mrs. JENCKES. You are speaking of plants, no matter whether serving an ice plant or a home?

Dr. BUTTS. Yes, ma'am.

Mr. JAMES L. QUINN. Regularly, Doctor, you have just two men?

Dr. BUTTS. We have 2 men the year around, and during the winter months we detail as high as 6 men.

Mr. JAMES L. QUINN. In the department, who is directly in charge of the smoke abatement?

Dr. BUTTS. I am.

Mr. WOOD. Do you mean to say there are only 2,000 plants in the city, apartment houses and public?

Dr. BUTTS. Coming within the scope of the law; yes.

Mr. WOOD. Does that cover apartment houses?

Dr. BUTTS. Yes, sir.

Mr. JONES. The new bill, if enacted, would cover all residences?

Mr. JAMES L. QUINN. Doctor, do you think the present law would be sufficient if you had sufficient help?

Dr. BUTTS. We could make it very effective and make Washington a clean city under the present law in court and out of court.

As to whether or not you want to remove the word "stationary", I am not able to debate that. I was smoke inspector 2 days before the birth of one of the members of the committee, who prepared this bill. That does not mean I would know all about it, but I do know this, that boilers other than stationary create quite a bit of smoke and that private residences do. Inasmuch as they are exempt under the law, we do not make any notation of it.

Mr. JAMES L. QUINN. Doctor, what is the amount of money allocated to your bureau? Do you have that information?

Dr. BUTTS. We have none except the salary of the sanitary inspector detail. If 1 inspector, it is \$1,800 per year; if 2 inspectors, it is \$3,600 per year. We have no fixed amount of money appropriated for the enforcement of the smoke law.

Mr. JAMES L. QUINN. Does your work take in other agencies in addition to smoke?

Dr. BUTTS. Yes, sir.

Mr. JAMES L. QUINN. You have diversified interests in addition?

Dr. BUTTS. Yes, sir.

Mr. JAMES L. QUINN. And do not give it your entire time?

Dr. BUTTS. No.

Mr. JAMES L. QUINN. But it would require the full time of some man, would it not?

Dr. BUTTS. In order to do it properly it would.

Mr. JONES. I just want to say, in closing, that I believe the smoke abatement should be made very effective by the use of higher grade help or more intelligent help in firing boilers in these apartment houses and other places. I know that to be a fact, because you go in there, and you will find out that the men usually in those places, if you would ask them what combustion was, they would not know whether you meant water, steam, coal, or what.

Mr. WOOD. That is, you mean, the firemen of those boilers?

Mr. JONES. The firemen of those boilers.

Mr. WOOD. That makes it necessary for a fireman's license law?

Mr. JONES. No; it does not.

Mr. WOOD. How would you go about it to ascertain the skill and ability of these firemen?

Mr. JONES. I believe that the engineers in charge, a man who has passed through an examination, would solve the problem.

Mr. WOOD. Suppose the apartment house has no engineer. A great many large apartment houses have neither a fireman nor an engineer and the janitor fires the boilers.

Mr. JONES. I will admit that is entirely wrong.

Mr. WOOD. How are you going to control that without inspectors?

Mr. JONES. That is the point I have not gone into.

Mr. HENRY I. QUINN. I suggest if the owner of an apartment house violates the smoke law he will see the necessity.

Mr. WOOD. You are putting the responsibility upon the owner of the apartment, which is absolutely wrong. You should have a fireman's inspection law and let it be the duty and function of the Commissioners to see that sufficient skill is possessed by the man who fires the boilers and not put that up to every apartment owner. What does the apartment owner know about a skilled fireman and engineer? He would not know about it either, would he, unless he had some knowledge of the profession of firing or running a boiler?

Mr. JONES. The way that the man is employed now in these apartments. They may want a man—call him "janitor", or whatever you will, or "fireman"—and the man they can get for the lowest money is the man who is hired.

Mr. WOOD. That is true; I agree with you.

Mr. JONES. I think we can make them hire men with experience and ability, and then you would have less smoke.

Mr. JAMES L. QUINN. In other words, let your organization suggest the men?

Mr. JONES. Well, if they want us to, we can furnish them.

STATEMENT OF E. BARRETT PRETTYMAN, CORPORATION COUNSEL, DISTRICT OF COLUMBIA

Mr. PRETTYMAN. We would prefer, due to the shortness of time, to present our views on the bill in writing and submit it in the record.

But there are one or two things I would just like to mention, because I would like to get it straight in the minds of the committee. I will preface my remarks by saying I think the interest the members of the committee have taken in this problem is little short of marvelous and I think it is perfectly evident this kind of work will reach a satisfactory solution of the problem.

Mr. JAMES L. QUINN. We are not susceptible of flattery.

Mr. PRETTYMAN. We have two problems: One is the smoke abatement and the other is the boiler inspection. We put the two problems together in this bill. But it does not make a particle of difference to us if it is desired to have them separated in two bills.

Mr. JAMES L. QUINN. Have you got a sufficient appropriation?

Mr. PRETTYMAN. Economy was one reason for putting them together. The bill can be very readily be taken apart.

Mr. WOOD. Is this bill, H. R. 7204, sponsored by the District Commissioners?

MR. PRETTYMAN. Yes, sir; that is the bill we sent up. We say in our letter of transmittal that the problems are not directly similar but somewhat related.

The smoke problem of the District at the moment is under the health department. This bill contemplates it as really an engineering problem and it ought to be transferred over to the engineering department.

Now, let me say one more thing: We have a present law. We think that the present law only needs amendment. In the first place, we think that the exemption of residences and locomotives ought to be stricken out; in the second place, that some tolerance ought to be provided. The act the way it is now prohibits the emission of smoke for a second.

In the third place, there ought to be some corrective administration set up, instead of merely having a criminal procedure in order to carry out the law.

And, fourth, we ought to have some personnel.

Those are the only four sections in which we think the present law is lacking.

In the present smoke law we followed very closely the model smoke law drawn by the Bureau of Mines. The Massachusetts statute here presented is modeled after the same statute ours is modeled after. In substance, it sets up a division in the engineering department, and then sets up an advisory board; and then prohibits the emission of smoke on a given standard; and that is about all there is to the bill.

What the committee may do with it in detail does not concern us. If you want to take it apart, that is entirely satisfactory. As to the details we would like to present for the record a written statement.

MR. WOOD. Who inspired the Commission to submit this bill?

MR. PRETTYMAN. I do not know, originally. It has been worked on for a long time. A committee was appointed by the Commissioners some time ago, of which Captain Clark, Assistant Engineer Commissioner, was chairman; and that was composed in part of District officials and in part of citizens' associations representatives. But if you read the bill, it is very broadly drawn from the model bill of the Bureau of Mines.

MR. WOOD. It appears that Rufus Lusk, secretary of the Building Owners and Managers, was one of the inspirations.

I would not say Mr. Lusk—I was chairman of the committee and the committee was appointed a year and a half ago by the District Commissioners, and they took Captain Clark as Assistant Engineer Commissioner; they took one member of the Apartment Owners' Association, they took utility men, they took the director of inspection of the District, and myself, with no connection myself politically or any other way, and made up the committee which considered the subject over a year, and it is the result of our findings.

MR. WOOD. This bill is absolutely satisfactory to Mr. Lusk, of the Building Owners and Managers, because he addressed a communication to all members December 22, 1934, submitting a draft of the bill dated December 8.

MR. PRETTYMAN. He may have come in to see what we were doing. He had no part with our committee.

Mr. WOOD. He dealt with it in detail. I wanted to know about that, because Mr. Lusk seemed to be very deeply interested in this legislation.

Mr. PRETTYMAN. I think he is very favorable to H. R. 7204.

Mr. WOOD. Yes; to both bills.

Mr. PRETTYMAN. A great many people are interested in a great many problems connected with it.

Mr. WOOD. Of course, that may be all true. Mr. Lusk appeared before our subcommittee which had under consideration the work in connection with unemployment insurance and economic security for the District, and I am just inclined to think he would not favor this unless he thought—

Mr. JAMES L. QUINN. In other words, the Ethiopian in the lumber yard?

Mr. WOOD (continuing). It contained some great personal benefit to his association. And as practically all the testimony that has been submitted here this morning in reference to H. R. 7204, I would like to hear from Mr. Lusk or the Building Owners and Managers Association, who seem to have had a great deal of interest in this. I do not know why they should not have appeared before the committee.

Dr. BUTTS. Mr. Lusk was at the other meeting of the committee.

(The brief referred to and submitted jointly by Thomas H. Jones and associates, and submitted by them, is as follows:)

BRIEF PRESENTED TO THE SUBCOMMITTEE BY THE INTERNATIONAL UNION OF
OPERATING ENGINEERS

APRIL 15, 1935.

HON. VIRGINIA E. JENCKES,

*Chairman Subcommittee District of Columbia
Committee of the House, Washington, D. C.*

DEAR MRS. JENCKES: As authorized representatives of the following organizations: Hoisting, Portable, and Power Shovel Local No. 67, Stationary Engineers Local Union No. 99, School Engineers Local Union No. 102, School Engineers (colored) Local Union No. 104, all members of the International Union of Operating Engineers and the Universal Craftsmen Council of Engineers No. 22, we desire to submit this protest against some of the provisions of H. R. 7204 (cited as "Smoke and Boiler Inspection Act of the District of Columbia") now under consideration.

We are unanimous in an opinion that the smoke nuisance should be abated. We believe, though, that in the bill now under consideration, with all its many ramifications, the idea of the control and regulation of smoke has been utilized by selfish interests as a "smoke screen" in order to effectuate certain changes in the District license law. These interests ignore the fact that by the changes which are proposed the lives of those will be endangered who are employed in office buildings or who work or reside in hotels or apartment buildings. This danger may even extend to those who use the public thoroughfares near such buildings. To even a more grave fact is no consideration given which is, that this bill, if enacted into law, will place in jeopardy the safety of 86,000 pupils attending schools in the District of Columbia.

Our interest is primarily that the safety of the residents and school children of the District shall be preserved. We are, however, impressed with other features of the bill, which to us appear to be objectionable, and these also we wish to discuss.

SECTION 4, PAGE 3

Provision is made in this section for the appointment of an advisory board, which board shall act as adviser on engineering policies and regulations to the boiler and smoke inspector. By the succeeding section (sec. 5) it is provided

that in the event of appeals from decisions of the boiler and smoke inspector the advisory board shall act as a board of appeals.

We endorse the requirement that members of the board shall have no financial interest in the manufacture or sale of combustion or smoke-abatement devices or in fuel, but the requisites that they shall be engineers of capacity for associated service in municipal work and that at least 2 of the 5 can be mechanical engineers is open to objection. Under the text any engineer (civil, mining, electrical, mechanical) may be appointed. The essential is that he shall have a capacity for associated service. It is our contention that to this board should be appointed a practical operating engineer and a combustion engineer.

SECTION 6, PAGE 4

By section 20 a fine not to exceed \$100 or imprisonment for a period of not more than 90 days, or both, is provided as a penalty for violation of section 6. In view of the comparative severity of the language of section 20, the District Commissioners should determine and promulgate a period of time schedule during which the penalty shall not apply.

SECTION 7, PAGE 4

The word "reconstruct", as used in the text of the proposed bill, bears too broad and general a meaning. Interpretation of this word could make possible the repair of more than 50 percent of the steam boilers now in use in the District, and this would be in conflict with the code of the American Society of Mechanical Engineers, which was adopted by the Commissioners of the District of Columbia on August 6, 1924. The code which is a part of the regulations of the District requires new boilers under conditions included within the meaning of the word "reconstruct" in the bill now being considered.

SECTION 8, PAGES 4 AND 5

The objection to this section is substantially the same as that made against section 4 above. The penalties which may be invoked for violation are comparatively severe. This being so, the regulations authorized to be made by the District Commissioners under the proposed act should be clearly defined and made continuously effective. They should contain no element of vagueness or uncertainty.

SECTION 9, PAGE 5

We are genuinely of the opinion that this section involves a serious menace to all who are employed in office buildings or who work or reside in hotels or apartment buildings, or who attend public schools in the District of Columbia. It was drafted and inserted at the instigation of the Building Owners and Managers Association of the District of Columbia with the idea of dispensing with the services of licensed engineers in the operation of low-pressure heating plants, and replacing them at lower rates of wages with men not qualified to pass the requirements of the engineers' examining board.

SECTION 1, PART (C) OF THE

Regulations adopted by the Commissioners under authority of the act of Congress approved March 4, 1925, reads as follows:

"All boilers having an assisted or mechanically operated return to the boiler shall be inspected annually, and the operation of any such boiler shall be under the supervision of and conducted by a steam engineer who shall have first been examined by the board of examiners of steam engineers, and duly licensed, and by none other."

By eliminating the phrase, "having an assisted or mechanically operated return" and the substitution therefor of the phrase, "operating at a pressure in excess of 15 pounds per square inch", it appears to have been the intent of those who framed this bill by replacing skilled, licensed engineers with unskilled, unlicensed men at lower rates of wages, to destroy the safeguards that during the past few years have eliminated steam-boiler explosions in the District of Columbia. The safety of the citizens of the District is definitely involved.

We respectfully invite the attention of the committee to the copy of the proposed smoke and boiler bill which we present. Copies of this proposed bill

were mailed on date of December 22, 1934, to all members of the Building Owners and Managers Association by Mr. Rufus S. Lusk. The fact that members of this association were in possession of copies of this proposed measure and were supplied with copies of various amendments, and the further fact that its members composed a majority of the committee by which the bill appears to have been drafted, is strong evidence to us that a definite understanding existed between the drafting committee and the Building Owners and Managers Association. Beyond this is the fact that representatives of the International Union of Operating Engineers were denied copies of this proposed measure when its existence first became known and that, although upon request a hearing was promised by Capt. H. F. Clark, chairman of the committee, such hearing was never held.

In support of our belief that this bill was drafted primarily with the thought of reducing wages by replacing competent, skilled men with incompetent, unskilled men, it seems best to recite our experience with the Secretary of the Building Owners and Managers Association, Mr. Lusk.

About April 1, 1926, and thereafter for a period of at least 3 months, at a time when he held the office of executive secretary to the Operative Builders Association and the Excavating Contractors Association, Mr. Lusk formulated and conducted a strike-breaking organization and imported strike breakers into the District, placing them in positions vacated by engineers who were then on strike, at rates of wages lower than those asked for. This was done in complete disregard of the engineers license law. This sad experience has taught us that where Mr. Lusk is actively interested, vigilance is the price of safety. We are strongly of the opinion that this bill was originally proposed by him and that section 9 was so phrased at his suggestion as to cover its real meaning and intent, thus avoiding an anticipated and greatly to be dreaded wave of public indignation.

SECTION 11, PAGES 5 AND 6

Since fully 90 percent of the steam boilers in the District of Columbia are insured, the effect of this section will be to transfer authority for the safety of boilers from the boiler and smoke inspector to the insurance companies who are definitely parties in interest. Compliance with this section will result in a transfer of the safe control of boilers which has been marked by a complete elimination of accidents to a control by fully a hundred individuals as representatives of different insurance companies, who make during the year 1 internal inspection and 2 other inspections while the boiler is in operation. During the remaining 362 days of the year low pressure boilers may, under the legislation, be under the direction of unqualified attendants. In the same way high-pressure boilers which have been insured will not be under the watchful supervision of a boiler inspector whose interest is only that there shall exist a complete measure of safety.

What has been written above rests upon the following, lines 20 to 24, of the section:

"Where a report of such inspection is filed within 30 days after such inspection with the boiler and smoke inspector, such inspection and report may take the place of the inspection hereinbefore provided, and the certificate of inspection may be issued upon such report."

Here is vigorous objection to the 30-day interim allowed for filing reports of inspection. During that period many things may happen—the boiler may explode with consequent loss of life. In other words, the measure permits a continuation in service for a period of 30 days of a boiler discovered by inspection to be unsafe.

SECTION 15, PAGES 7 AND 8

Analysis of this section discloses the fact that all persons in the District of Columbia who install a heating plant or whose plants are inspected, will be obliged to pay fees of any amount which may be fixed by the Commissioners of the District of Columbia, excepting only in those instances in which plants are insured, when the requirement makes it necessary to pay a fee of only \$1. This reduces to the simple fact that those who are not prepared or are unwilling to insure their plants will be penalized for the position they assume by the regulations of the District. The ultimate result of this, of course, will be to cause all persons who operate steam plants with a pressure in excess of

15 pounds to place them under insurance. This, in turn, will place all inspection under the direction of the various insurance companies and will remove it entirely from the office of the boiler and smoke inspector, with the consequent breakdown already pointed out in the safety regulations which have operated to a complete degree of satisfaction.

SECTION 17, PAGE 9

The actual operation of the provisions of this section may quickly reduce to an absurdity. To be sure, the boiler and smoke inspector or his engineers and inspectors shall have the right to make entry in the performance of their duties at all reasonable hours upon premises from which smoke is being emitted or has been emitted, or in which a steam boiler or unfired pressure vessel is being installed, operated, or maintained. The definition of what constitutes reasonable hours is left entirely to the discretion of those who desire to make entry. Against this is the fact that it shall be unlawful for any person to deny admittance to any such engineer or inspector. In the last analysis, by the terms of this section, entry may be made at any time, even to the point of persecution of the individual home owner or the individual or group of individuals who maintain ownership over a commercial property. The potentialities of this section are highly dangerous and should be definitely restricted.

SECTION 18, PAGE 9

Having in mind the fact that under the proposed measure virtually all of the work of inspection will eventually be turned over to the insurance companies, the duties of the office of the boiler and smoke inspector will reduce to those of keeping records and compiling statistics. The clerical possibilities of all this work are enormous and immediately suggest the necessity for a request for the sum of \$25,000 with which to enforce the provisions of the proposed measure. It is obvious that one of two results must obtain; that either it will be necessary to collect fees in large annual amounts for inspection, or to call upon Congress each year for an appropriation sufficient to cover the cost of the administration work of the office. Parenthetically, it may be added that the present regulations are in constant and satisfactory operation with no cost devolving upon the District government and without the requirement of additional appropriations.

SECTION 19, PAGES 9 AND 10

It is of little satisfaction for the average home owner to note that his recourse under the provisions of the bill is in the courts. Court actions are costly, and the costs of refuting all legal charges which have been brought upon him under the provisions of this bill may be so high as not only to cancel his equity but even sufficiently great to overbalance the total value of his home.

SECTION 20, PAGE 10

Under some of the sections of the proposed bill the responsibility and penalty for violation of its provisions may fall directly upon the engineer. In some instances, the direct imposition of this penalty might be considered to be fully equitable, but on the other hand, it should be borne in mind that frequently the engineer is handicapped by the necessity of using equipment which, although technically safe, is outworn and outmoded. Carried as in the instance above to the extreme of absurdity, penalties under this legislation may be assessed against so innocent a person as a housewife who, unfamiliar with the theory and practice of combustion, undertakes to burn a low quality of fuel or an accumulated amount of rubbish in her heating plant. The provisions of this section should be sharply circumscribed.

SECTION 21, PAGE 10

It is a well-known fact that the Brookings Institution and Lorton Reformatory are being operated under the supervision of unlicensed chief engineers. The authorities of the District of Columbia are aware of this fact. Operation of these plants otherwise than under the direction of licensed engineers is in direct violation of existing regulations. In fact, is made tacit admission by the

Commissioners of the District that they are unable to enforce the present existing regulations.

As above pointed out, there has been established direct communication between the drafting committee which framed this measure and the Building Owners and Managers Association of the District of Columbia. This communication has resulted in the complete exclusion from consideration of the thoughts of other organizations, even including civic organizations. The measure as it stands now becomes, then, one which has been framed by one group of the parties in interest. This being the event, we ask for the defeat of this proposed legislation and the adoption as a substitution therefor that measure known as the "Roberts' Smoke Law", from which will come no complication with regulations in respect of a control of smoke and safety regulations in respect of the operation of boilers which now are in existence.

AARON V. DEAN,

International Union of Operating Engineers, Local Union 67.

CHAS. F. KUECHLE,

Business Representative

International Union of Operating Engineers, Local Union 99.

W. I. GREEN,

President International Union of Operating Engineers, Local Union 102.

W. I. GREEN,

Representative International Union of Operating Engineers, Local Union 104.

THOS. H. JONES,

Universal Craftsmen Council of Engineers, 22.

WASHINGTON, D. C., April 16, 1935.

Mrs. JENCKES. Yes; and made a few remarks, and I thought he was coming back this morning. We will now hear Mr. John J. Hamilton.

STATEMENT OF JOHN J. HAMILTON, ATTORNEY AT LAW, WASHINGTON, D. C., ON BEHALF OF BALTIMORE & OHIO AND PENNSYLVANIA RAILROAD COS.

Mr. WOOD. How many more witnesses have we?

Mr. HAMILTON. I have very little to say and will take not over 2 minutes. I would like to have the privilege of filing a brief.

Mrs. JENCKES. That will be fine.

Mr. HAMILTON. I appear on behalf of the Baltimore & Ohio Railroad and the Pennsylvania Railroad Cos. We have had conferences on this District bill, H. R. 7204, and we are pretty well in agreement so far as steam locomotives are concerned. There are only one or two points we may differ on and we want to take that up and see what their report is going to be and make such suggestions as we think necessary for the benefit of the committee.

Mr. JAMES L. QUINN. Do you have your objections to it in writing?

Mr. HAMILTON. I have some amendments to offer to H. R. 7204. There are only two of them, but I can attach this to the statements I would like to accompany and file with the written statement.

Mr. JAMES L. QUINN (presiding). It is helpful to have it in writing, and since we are going to have the record printed we would like to have it all together.

Mr. HAMILTON. I want to say something in regard to control, Mr. Quinn, on this question of including locomotives under either one or the other of these bills, or as an amendment of the original law as suggested by some counsel. Locomotives were excluded from the original law. But, notwithstanding the fact that the law did not apply to them, the companies have established a committee of 14 men

operating in this District for the past 12 years on the question of smoke control in the terminal area. Those 14 men represent 4 or 5 different railroad companies that come in here, and it is surprising to see their report of the amount—although not under any law—surprising to see the effort they have made and the accomplishment they have made in the matter of curtailing and prohibiting smoke on some of the engines in the District of Columbia.

Mr. JAMES L. QUINN. From an economic standpoint?

Mr. HAMILTON. Yes, sir; I have a copy of the report here of that committee for the year 1934, and it shows 12 offenses in the whole terminal area by steam locomotives, or, at the rate of one a month. Now, what that committee does is, it makes inspections; it divides up into subcommittees and makes inspections. It has a regular meeting every month and gets reports from those committees and the subcommittees are inspecting all the time that they can give to it.

If an engineer on an engine is found to be committing smoke nuisance or creating too much smoke he is investigated, and we find out whose engine it is and who the employees are on the engine, and they are called up and interrogated and told what should be done. They have an inspector who can tell them what they ought to have done, if they are doing something wrong.

Those men are not fined at once; they are cautioned, and they are cautioned for a second time, just as I understand the law has been operating in Hudson County, N. J., and in Pittsburgh, and in Philadelphia, Pa. Instead of grabbing the man off the engine and sending him to jail or fining him, he is instructed first, and he is warned that he must not do it again, and if he does not heed the warning, he can be taken up and fined.

Mrs. JENCKES. The only thing the railroads want is to avoid undue hardship, and they are willing to cooperate to the fullest extent?

Mr. HAMILTON. Yes, sir. We insist we have not been violating the law, which was not applicable to us.

So far as the boiler-inspection question is concerned, we think that steam engines ought to be excluded. They come under the boiler inspection law of the Interstate Commerce Commission, and they ought not to be included in this bill or any other bill, and those suggested amendments are the ones I want to submit to the committee.

(The documents referred to and submitted subsequently by Mr. Hamilton are as follows:)

STATEMENT OF O. L. BRITT, WASHINGTON, D. C.

Mr. BRITT. Mr. Chairman and gentlemen of the committee, I jotted down a few remarks here, which I will submit as it is, if that is satisfactory to you, and simply make a few comments.

Mr. JAMES L. QUINN. Who do you represent, Mr. Britt?

Mr. BRITT. I represent only myself. I am connected with the Bureau of Standards, but inasmuch as this naturally falls in the field of the Bureau of Mines, the Bureau of Standards does not care to take any official action at all. So I am speaking only my own mind in this case.

Mr. JAMES L. QUINN. As a citizen of the District?

Mr. BRITT. Yes; I have lived in the District some 10 or 12 years.

All of us agree that it is highly desirable to eliminate, as far as is

practicable, the dust, cinders, soot, visible smoke, and obnoxious gases from the atmosphere for the sake of cleanliness and health. Those of us in the engineering profession, particularly those dealing with heating- and power-plant problems, are aware of the fact that complete abatement of these nuisances is extremely difficult if not impossible under certain conditions. For example, a fire can't be kindled without producing excessive smoke for a short time, regardless of the fuel used; dust or soot is discharged from the stack when the boiler tubes or heating surface is blown; and dust is discharged when ashes are dumped or the fire is cleaned. These are all necessary operations, and any regulation that is framed must recognize these and other conditions if such regulations are to be satisfactory and effective.

I believe that fully 85 percent of our atmospheric pollution is due to the stack discharge from the thousands of domestic, apartment, and commercial building heating plants. If this is correct, concentration on the elimination of the chimney nuisance in this group would produce the greatest results. Too little thought is given in the selection of a combustion equipment for buildings in this group. In a majority of cases the boilers selected are of a poor design or are too small to meet the heating requirements. Such installations usually operate unsatisfactorily, as regards smoke emission, regardless of the kind of fuel used.

In the case of the plants that are of the proper design and size, they are too often operated by inexperienced persons or those ignorant of proper firing methods to secure efficient and smokeless combustion. Then, too, there is an incentive to change to lower-quality fuels in order to reduce heating costs. Many furnaces, when designed for a particular fuel, will not operate as satisfactorily if a fuel of different burning characteristics is used.

The smoke problem in this city would not be a serious one in spite of the many poor furnace installations if those who operate domestic installations could be instructed in proper firing methods and advised on the proper grades of fuel to use.

The smoke and boiler inspection division, together with the advisory board that would be set up under H. R. 7204, should not be merely an organization to check on violations and settle disputes, but should also act as an advisory and educational body. By eliminating the poorly designed furnace before it is constructed, by advising on the proper grades and types of fuel to be used, by encouraging district heating, by educating the public in general on proper combustion methods, and by adopting a policy of gradual but eventual elimination of switching locomotives and the offending small domestic and apartment plant the proposed smoke and boiler inspection division can accomplish the most good.

Atmospheric pollution resulting from the operation of industrial power plants, railroad locomotives excepted, is not very serious because of the comparatively small number of such plants in the city and because such plants are usually carefully designed for efficient and smokeless operation. All such plants do at times emit smoke of such a density as to constitute a violation of most smoke regulations, which specify no time limit on smoke emission, as is the case with our present regulation. It is absolutely impossible to operate the best designed furnace without having an objectionable stack discharge under cer-

tain conditions. As previously stated, a fresh fire can't be kindled without producing objectionable smoke; boiler tubes can't be blown or dusted without discharging objectionable soot or dust; ashes can't be dumped or fires cleaned without producing considerable dust. Our present regulations do not take these facts into consideration and do not specify a maximum time limit on the production of an objectionable stack discharge without violation of the regulation. This has forced some plants to start their fires, dust tubes, clean ashes, and so forth, after dark, when violations can't be detected.

None but the largest of power plants can justify the installation of apparatus for the purification of their combustion gases because of the expense involved. Combustion engineers are working diligently on this problem, and perhaps within the next few years such apparatus will be available to the small plant.

I believe that H. R. 7204 is the better of the two bills on smoke abatement now before the committee. This bill would set up a division in the District government, with authority to draw up and put into effect a smoke and boiler regulation. This division could make a more detailed study of the situation than would be possible by the congressional committee and regulations resulting from this study could be changed to meet changing conditions more readily than would be possible if the details were written into the bill and thereby require congressional action before any changes could be made.

Specific comment on H. R. 7204 is as follows:

Section 4: Qualified engineers in the Federal Government service should be available for service on the advisory board.

Section 6: The Ringleman chart comparison method is satisfactory only for comparison with black smoke. It cannot be used to detect obnoxious gases or compared with yellow or blue smoke which may be just as objectionable as black smoke. This method does not take into consideration the volume of smoke discharged. For example, assume that a given quantity of smoke of maximum allowable density is discharged from a large diameter stack; now if the same smoke were discharged from a stack of smaller dimensions, its density would exceed that in the first case. Obviously the contribution to atmospheric pollution is the same in both cases. The details of the method to be used should be developed by the smoke and boiler inspector and advisory board instead of being incorporated in the basic law.

Section 14: Government owned and operated stationary plants should be exempted as in the case of Government boats.

That is about the only comment I have to make.

Mr. JAMES L. QUINN. Thank you very kindly.

STATEMENT OF WILLIAM C. STRICKLER, LYON VILLAGE, VA., PRESIDENT NATIONAL ASSOCIATION OF PYROMETRIC ENGINEERS

Mr. JAMES L. QUINN. State your full name, where you live, and in what capacity you appear here.

Mr. STRICKLER. My name is William C. Strickler, and I live at 144 Holly Street, Lyon Village, Va., and I am representing here the National Association of Pyrometric Engineers.

I am authorized by the National Association of Pyrometric Engineers to object to these two smoke bills on the ground that the pres-

ent law, if properly enforced, would be satisfactory; that is, if the Commissioners had the proper force.

In the bill (H. R. 7204) covering boiler inspection and steam pressure—I do not see where that comes in, smoke abatement at all, because you can take a boiler, regardless of pressure, and make smoke if it is not designed properly.

Talking about designing a boiler to cut out the smoke: They have a plant right inside of this building that I will venture to say no one has ever seen objectionable smoke coming out of that stack.

You take a small plant in southwest Virginia, where there is not any smoke law over that plant. They do not make smoke, due to the fact that the fireman has been instructed how to fire those boilers, and he finds it very economical to fire them that way.

You can take apartment-house owners and building owners and show them soot in the boiler until they realize what that means. If they put the asbestos in, they would understand. But this 15-pound pressure this smoke law speaks about many times, any qualified engineer being in charge where the present smoke law governs and where manual means is used in putting the water back into the boiler. Just one instance: Our boiler inspector was told about operating without an engineer required to be there; he told the man managing the building to put a licensed man on that job within so many hours. But this man had a little influence at the District building and his boiler inspection was set aside.

Now, right after that happened the fireman operating or firing the plant, due to his inability to operate the stoker properly, burned it up, completely destroyed the stoker on the inside of the boiler.

That will show that the fireman is a low-paid man and is not qualified to fire these jobs.

We will take another instance, these building owners: A Philadelphia concern owns five or six buildings in this town. Some of those buildings require licensed engineers to be on the job at all times. The licensed man is not supposed to leave the building and is only allowed to go as far as his pipe lines in the building. The boiler inspector carries that out. These buildings have one engineer. He goes from building to building. Maybe he is in one of those buildings a half hour a day. That is not right. I was in one of those buildings the other day. They had a colored man there firing a job, and you could very well see what he was doing. I asked for the engineer and he said, "The engineer came this morning, but he is gone now."

The safety part of that is you would have to use your imagination right smart to find out where the water level was, due to the condition of the water gage. Somebody is wrong there. This H. R. 7204 bill eliminates smoke; I think everybody is agreed that the boiler has to be designed to burn fuel properly in order to eliminate smoke, such as the plant I told you about, on the other side of this bill. Regardless of the way you fire that boiler, you can stir it up or put a whole lot of coal, old tires, or tar or cork and something of that kind in there and make it smoke, but you can burn coal in any way you care to and you cannot make it smoke.

Now, you can make smoke in these small plants regardless of pressure, whether running under vacuum of 15 pounds or pressure of

300 pounds. You take the last plants built in this vicinity at Buzard's Point, put up for the Government, and you do not see a lot of smoke coming from those plants, because they are equipped and they are designed to burn their fuel economically and burn coal economically. But you do not have smoke.

Mr. JAMES L. QUINN. Do you represent the firemen or the engineers?

Mr. STRICKLER. I represent the National Association of Firemen, District No. 1.

Mr. JAMES L. QUINN. What method does your organization use to educate your men properly in the consumption of fuel?

Mr. STRICKLER. We have a national organization, which has an educational program carried in the official magazine, on combustion engineering and refrigeration every month, and our association is an educational and social organization; it is not any union.

Mr. JAMES L. QUINN. What test do you apply to men before they become members, as to ability?

Mr. STRICKLER. You have to be a licensed engineer in order to be an active member of our association; and to be an engineer you are supposed to have 2½ years' experience as a fireman.

Mr. JAMES L. QUINN. In other words, you do not give actual training except what the men acquire through your magazine; you do not give lectures?

Mr. STRICKLER. We have lectures from the Combustion Engineering Corporation of New York. They have lectures gotten up which they send around and we get those lectures, and the Detroit Stoker people and separate organizations—they all have lectures and we get those.

Mr. Wood. In addition to that, you get the practical instruction every day?

Mr. STRICKLER. Yes, sir.

Mr. Wood. The fact of the matter is, a man can become a good, efficient engineer and fireman without reading any of these magazines?

Mr. STRICKLER. That is another point I want to refer to. The plant over in southwest Virginia has no smoke at all. They are not making smoke. They have a colored fireman, low-paid, but he has a good engineer over him who has instructed that man how to fire that boiler and he does it according to those instructions, and he has no smoke.

Mr. Wood. The fact of the matter is, all the instructions you can get through magazines, or from any college or university, really emanates from the actual practical experience in the engine room and boiler room?

Mr. STRICKLER. You can take a college professor, put him in the boiler room, and I do not think he is going to fire that boiler as economically; probably he cannot even keep steam up.

Mr. Wood. What I mean to say, the real knowledge comes from the actual experience of the engineer working in the boiler room?

Mr. STRICKLER. The law requires an engineer to serve 2½ years in a power plant before he can become an engineer.

Mr. JAMES L. QUINN. In your examinations did they give them any explanation of the relativity between oxygen and all of those elements which enter into combustion from a scientific standpoint, or

simply the crude physical handling of the coal or something of that kind?

Mr. STRICKLER. I did not have any of it. Of course, where I am employed we have our superior officer or foreman, who gave us an examination. When I was a fireman I came up from a water tender. I took the examination for a water tender's job. The water tender is over the firemen; the water tender is in charge of the boiler room. But in order to be in charge of the boiler we have to know how to fire.

Mr. WOOD. The skilled fireman must have more than just the ability to heave coal into a firebox?

Mr. STRICKLER. Yes, sir.

Mr. WOOD. That is really the smallest part of the profession to learn, to heave coal into the firebox—that is really not part of the profession, although that goes with it, of course?

Mr. STRICKLER. You can take anybody who is able to shovel coal and run the slice bar through his fire and keep steam up, but that is not the point. We have to keep it up economically and save coal or you will not be classed as a fireman.

STATEMENT OF P. C. BOWIE, WASHINGTON, D. C.

Mr. JAMES L. QUINN. State your full name and residence.

Mr. BOWIE. My name is P. C. Bowie; residence 6105 Blair Road NW., this city.

First, I would like to state, for honorable Mr. Quinn's information, there has been a lot said here about H. R. 7204, the boiler bill and the smoke bill being combined. I do not believe anyone has been in accord with it.

I might say this, that we have a very excellent steam plant in our State, War, and Navy Building. Along about 1926 to 1928—I am not able to give you the definite year—the Secretary of War suddenly decided they wanted an oil burner. A smooth-talking oil burner salesman came along and sold them oil burners.

At the time they were discussing it, it was brought to the attention of Dr. Hood, of the Bureau of Mines. This is unofficial—I cannot think of the gentleman's name who told me he was in the Bureau of Mines—but Dr. Hood objected and did not think the oil burner should be put in. They had a new set of boilers. But, nevertheless, the oil burners were put in. After they were put in the State, War, and Navy Building was one of the greatest smoke offenders the District of Columbia has ever had, and there was also an accumulation of soot and oil. I have been told by employees of the State, War, and Navy Building that in the morning when they would come they could not put their arms or hands on the furniture for the accumulation of grease that was there.

I had heard about this—I should say it was in January or February of 1929 or 1928 when I happened to go in Dr. Hood's office to talk to him about the warrant which the smoke inspector of the District had secured for him for violation of the District smoke law and attempted to get one for Mr. Lynn, the Architect of the Capitol, and, sorry to say, they had one for me. We were discussing a smoke bill at great length.

At that time Dr. Hood explained to me—and we all agreed with one another—that the setting of a boiler, that is, the combustion

chamber in a boiler, is the greatest offender we had; that if we had some way to overcome that, we could correct a large majority of it.

He also had his secretary bring me a copy of a bill he had prepared and submitted to the Commissioners several years ago, he and Dr. Fowler. The Commissioners would not listen to him. I think at that time they asked for \$10,000 to enforce the law.

I left; I found I could not have much effect. I was then in the real-estate business, operating apartment houses and office buildings, and residential houses in the District. Representative Cole introduced a bill in the House prohibiting the use of bituminous coal in the District. That immediately riled up the people who had bituminous-burning equipment. So we got together and went down again to see what could be done and at that time interviewed some of the bituminous-coal operators. That bill was defeated, however.

Shortly after that I took it up with the real-estate board, and there were two or three committees appointed to see if something could not be done to rectify and improve conditions in the city, but they were never able to do it.

A year ago last November I was managing an apartment house which was a violator of the smoke law. Unfortunately, the summer previous we had put in a new boiler. The owner of the apartment purchased that boiler; he did not consult our office at all. The boiler was not of the proper equipment. The smoke inspector began to harp on us, and one day we got 13 marks.

We took some engineers there to see what the trouble was, and they all reported that we had the wrong type of boiler and the wrong setting. So from that time on I went to the Commissioners—Commissioner Allen—and told him my story. I told him I thought they were working a hardship; that we knew we were violating the law, but were doing everything to correct it. But we could not keep up sufficient pressure in the morning with peak load. The Commissioner suggested he thought it should go before the Board of Commissioners. That was on Tuesday and the following Thursday they had this meeting in Commissioner Hazen's office, and had a representative of the Merchants and Manufacturers, a delegation of 14 or 15 men representing different organizations in Washington. The Board of Commissioners at that time appointed a committee who were to try to work out a new smoke law. I was fortunate enough to be on it, representing the Washington Real Estate Board. Since then I am out of the real-estate business and so I cannot act in that capacity. I have gone into the coal business, incidentally.

We worked on this bill 7204. I think we all agreed that the boiler inspection should tie in with the smoke abatement, because the smoke originates in the firebox and it is the lack of combustion that causes it.

I have heard a lot of these gentlemen here oppose it. I want to say this, that the real-estate interests of Washington are suffering more than anyone else, even more than the Government, with their buildings. It is costing them money. They have to build these buildings over.

If you have a law here, you have got to take the specifications and plans to the boiler inspector or smoke abatement department, let him examine those and see if you have the proper thing or you are going to rectify it. Instead of that, if you want to build a house, you take your plans down to the building inspector and he checks the weights

and the walls, and makes a survey showing where it should be, but he forgets about the heating plant; and the result is how many heating plants have been large enough in new houses. You may buy a new home and find the heating plant is too small. The fellow who bought the house might have been an old-time speculator. He is gone. You have to furnish a new heating plant. You have no redress. Under this bill 7204 you are rectifying the whole thing.

They eliminate inspectors. There has been a lot said here about boiler inspection, and one of the District engineers thought it was very nice. I want to tell you that the boiler-inspection amendment went into effect on Thanksgiving. The building I was operating—one of the coldest days in Washington—the building was erected in 1898, and never had a licensed engineer. He walked in and said, "Where is your license?" The dorky hadn't one, yet the dorky had been there 10 or 15 years, a very capable one. He didn't do a thing but go to the precinct and arrest the man. He had 51 marks.

Mr. WOOD. Didn't they have the present law on the statute books?

Mr. BOWIE. The same law was on the statute books.

Mr. WOOD. What was the reason for that?

Mr. BOWIE. He didn't get around to it; he didn't have time. There was one man and he gets \$5 to inspect each boiler.

Mr. WOOD. That is not derogatory to the law; that indicates there was not a sufficient amount of inspection in the District.

Mr. BOWIE. There was only one man ever appointed at the time. He had no assistants.

Mr. WOOD. Do you not think the present law would operate efficiently if they had sufficient inspectors?

Dr. BUTTS. This man said he operated buildings that have not lived up to the law.

Mr. WOOD. That is what I was saying. There was no one around to see there was a licensed engineer there. That shows lack of performance of duty as inspector, does it not?

Mr. BOWIE. Duty of the inspector to the manager that I was.

Mr. JAMES L. QUINN. You plead guilty?

Mr. BOWIE. I took the management of the building over and took it for granted they were meeting the requirements.

Mr. WOOD. It was not because of the law that that thing happened?

Mr. BOWIE. It was; yes. If that plant had been inspected regularly you would have had a licensed man.

Mr. WOOD. Then, if the present law, if we had sufficient inspectors, would be all right?

Mr. BOWIE. That is just the point with this boiler-inspection law.

Mr. JAMES L. QUINN. You will admit, after all, that the smoke nuisance will never be abated until there is close cooperation between building owners, the inspection department and every one else, will it?

Mr. BOWIE. The owners want—

Mr. JAMES L. QUINN (interposing). You never paid any attention to the law?

Mr. BOWIE. In that particular case it was a high-pressure plant, of which there are very few in Washington.

Mr. JAMES L. QUINN. That is all the more reason for having it more rigid.

Mr. BOWIE. We had taken the building over a week before. I think this, that there is not a property owner in Washington who would not like to get rid of the smoke, as is stated in the copy of that letter from Mr. Lusk.

Mr. WOOD. It is very interesting.

Mr. BOWIE. They are with you 100 percent.

Mr. WOOD. He does not want any inspection at all—Mr. Lusk does not, according to this brief. He does not say it in so many words, but that is what it means.

Mr. BOWIE. We agree on inspection.

Mr. WOOD. Suppose 7204 is enacted into law. Have you any assurance that it will not be violated just the same as the old law that you violated?

Mr. BOWIE. I have not any reason to think it will not be violated.

Mr. WOOD. Wherein can this law improve upon the old law when the only objection you seem to have to that law is that it was violated and did not have sufficient inspectors?

Mr. BOWIE. You are going to have sufficient inspectors; you are providing for them.

Mr. WOOD. Why not revamp the old law and provide sufficient inspectors?

Mr. BOWIE. Suppose you do that, and set up separate bills. You want to bring in residences?

Mr. JAMES L. QUINN. They should be brought in.

Mr. WOOD. Certainly.

Mr. JAMES L. QUINN. There is just as much smoke nuisance from residences.

Mr. BOWIE. They are the greatest offenders today.

Mr. JAMES L. QUINN. May I ask the gentleman one question? If I understand it, you are sponsoring H. R. 7204?

Mr. BOWIE. Yes.

Mr. HENRY I. QUINN. Yours being a committee of law violators. [Laughter.]

Mr. BOWIE. I would not say that, Mr. Quinn. I think they are sponsoring it simply because they are trying to justify conditions.

Mr. HENRY I. QUINN. Apparently your interest was aroused when the inspector called on you?

Mr. BOWIE. Not necessarily.

Mr. WOOD. May I ask the gentleman a question? Did you have anything to do with the drafting this brief by Mr. Lusk and others representing the Building Owners' Association?

Mr. BOWIE. May I see that just a minute? Is my name on it? [After examining paper.] No.

Mr. WOOD. You do not know anything about that?

Mr. BOWIE. No, sir.

Mr. S. A. JACOBS. On this committee there were how many experienced men in combustion and actually firing and operating this equipment?

Mr. BOWIE. I would say 6 out of 7.

Mr. JAMES L. QUINN. That is, inspectors?

Mr. BOWIE. Captain Clark; Captain Oram; Mr. Bennett, combustion engineer; M. X. Wilberding; and myself.

Mr. JACOBS. That is not my question. My question was, How many actual experienced men, operating men?

Mr. BOWIE. Men who have actually fired?

Mr. JACOBS. Actually operating.

Mr. BOWIE. I cannot speak for the others. I know I had.

Mr. JACOBS. That question was brought out by the gentleman.

Mr. BOWIE. I cannot answer for the others, because I was not associated with them before that time. But I have operated a boiler—firing.

Mr. HENRY I. QUINN. Do you have a license to operate that boiler?

Mr. BOWIE. I did not fire; I was a foreman.

Mr. JACOBS. It was a low-pressure boiler, was it not?

Mr. BOWIE. Yes.

Mr. JACOBS. That would not qualify you as an expert.

Dr. BUTTS. May I ask the gentleman a question? Captain Oram was one of the fellows who worked against the engineers, and I understand from our boiler inspector that Captain Oram is the man who stood up for the property owners and property engineers.

Mr. JAMES L. QUINN. I would say that is an improper question, unless the gentleman desires to answer it.

Mr. BOWIE. I can answer that. With all due respect, I can say he is one of the most unpopular men in his line, because he was on their necks all the time. So far as him being against you gentlemen, it is not so. He has been more or less with labor organizations.

Mr. WOOD. Mr. Chairman, that is entirely improper, and I would like to have the gentleman explain his position on this wording, wherein it is superior to the present law. Now, let us deal explicitly with the provisions of the bill. What does it do?

Mr. BOWIE. It is superior to the present law, because you are going to include all heating plants, including residences as well as commercial plants. You are going to have supervision of the installation to see that proper plants are put in.

Mr. WOOD. Is there any difference in this law and the present statutes other than the question of licensing engineers?

Mr. BOWIE. There is nothing in there about licensing engineers.

Mr. WOOD. Does it change that in any manner?

Mr. BOWIE. No, sir.

Mr. WOOD. What is there about the present law?

Mr. BOWIE. I feel, personally, that in order to eliminate smoke you have to combine boiler inspection with it. When you speak of boiler inspection, please do not mistru that you are speaking of safety devices alone.

Mr. WOOD. This bill deals with both?

Mr. BOWIE. It does, and if you are going to have a boiler inspection bill you have to have the whole thing; in other words, your firing is just as much a part of it as the safety device.

Mr. JAMES L. QUINN. Do you know of any city or State that has such a combination?

Mr. BOWIE. I cannot say that I do.

Captain ORAM. I know one, St. Louis—boiler inspection, elevator inspection, and smoke inspection.

Mr. JAMES L. QUINN. They have a funny combination.

Mr. WOOD. They are not all in one department.

Mr. JAMES L. QUINN. They have their divisions; they do not have the same man who inspects elevators to inspect the boilers.

Mr. WOOD. In other words, the smoke abatement law was not passed at the same time. They are in one code, but were not passed at the same time.

Mr. JAMES L. QUINN. And are not functioning by the same people. That is customary in our State and practically today that embraces the health, safety, and everything else. But that is peculiar in this bill.

Mr. WOOD. In the St. Louis statutes they are not combined as they are in this bill. I know something about St. Louis.

Mr. JAMES L. QUINN. We will next call on Mr. Austin.

STATEMENT OF PHILLIP W. AUSTIN, REPRESENTING THE LOCAL UNION OF FIREMEN AND ENGINEERS

Mr. AUSTIN. My name is Phillip W. Austin and I represent the local union of Firemen and Engineers.

Mr. JAMES L. QUINN. Give your address.

Mr. AUSTIN. 26 Sixth Street NW.

I believe it was you who asked a question of the young man over there as to what degree of training or technical education the engineers and firemen had to have. The young man said they had to be licensed, but I think he overlooked the fact that in order to obtain a license they first have to be examined by the board of inspectors, and while their education along those lines may not be technical, it is thorough in practice, since the board should know if they are qualified, and I am sure the Board gives a proper examination. They are perfectly qualified and understand the nature of the work, its physical functions and the protective features of it.

With respect to the combined—

Mr. WOOD (interposing). They are especially qualified, which is of an advantage in an emergency.

Mr. AUSTIN. Yes, they understand just exactly how the pressure should work, what the degree of safety is and they learn all phases of the work from their familiarity and experience with it, just as the young man said, those things occur. In regard to the elimination of smoke and waste and everything else of that nature, the men become skillful from handling the equipment.

Now, with respect to the fact that this bill proposes or appears to be a combination of two entirely different things ought in no wise deter its adoption on that ground alone because if it has not been done in other cities does not necessarily mean that it is not a good thing.

Now, I think that the greatest importance should attach to it from the standpoint of safety, from every angle.

Now, in regard to the elimination of smoke from a sanitary standpoint it is of great benefit to the community from the standpoint of hygiene and sanitation. The same thing might be said to be the case also from the standpoint of public safety on the question of eliminating risks and hazards.

Now, I take issue with the young man. I had a conversation with him. He probably does not recall my name was Austin, but I called you—Captain Oram—in respect to the adoption of a bill for the licensing of firemen and the additional need of having the firemen and engineers stick close to their place of work.

The captain made some very interesting observations and he stated that we had only one inspector in the District of Columbia. I hope that I may freely quote you, Captain. At all events, Captain Oram stated that we were veritably living on a powder keg because this inspector could not reasonably make all the rounds and the best he could do was to go around to the dangerous spots and hope that nothing happens in the other places.

Now, the very fact that we have dangerous spots in and of itself demonstrates a condition that certainly ought not to exist. We know, many of us who have been here for some time, of the very serious explosion that occurred in one of our 5-and-10-cent stores and information is to the effect that there have been very many other explosions that have occurred, but have been very quietly hushed up. I make that statement not as an attack on the situation, but I state that merely to show that dangerous conditions do exist and they should be provided against.

In regard to the inspectors, the number should be increased. After all, this is the Capital of the Nation, and while we have to beg for money from Congress, it seems that Congress should have a sense of fair play to give us the money because with a city of this size and one inspector it is unthinkable. I think anyone will agree with that, that that is a condition that ought not to exist in this community.

I think also that the firemen and engineers should be licensed for any sort of public buildings, especially where the safety of others who have no control over the building is affected. I mean apartment houses particularly where the tenants exercise no dominion whatever over the heating plant, office buildings and many places where the tenant has no control or jurisdiction whatever over the things that furnish him with the hot water, and his heat. I do not think that is too great a hardship for the realty owner because his costs are spread over his tenants and if it is done to all the income is necessarily increased to meet that additional cost; and then, too, it eliminates the necessity for hazards and the additional expense of having to repair or make good or stand for lawsuits.

The big thing as I see it is that it makes for the betterment of the community and for our well-being. I think that broad attitude should make us look with an open mind to anything that is calculated to improve conditions here.

Mr. WOOD. What is your position in regard to this bill?

Mr. AUSTIN. I take no position with respect to this. I simply wanted to clear up some of those questions that he has asked about the qualifications of engineers and firemen and while I was on my feet I felt that as a public citizen I should state some reasons which I thought were good.

Mr. WOOD. Tell us this question.

Mr. AUSTIN. Yes, sir.

Mr. WOOD. I do not know but I want to find out. I am stopping at the Annapolis Hotel. And in that connection, do these hotels have licensed engineers?

Mr. AUSTIN. I do not know.

Mr. WOOD. Do some of them have?

Mr. AUSTIN. Some of them have, but I do not believe the—

Mr. NEVILLE (interposing). Some of them have, but the Annapolis Hotel does not have.

Mr. WOOD. Yes?

Mr. NEVILLE. I want to ask Representative Wood a question: They have a licensed engineer in the Annapolis Hotel; he is a colored man and they have five firemen in there that are not licensed.

The last time I was there, trying to get them into our organization, the first thing you do naturally, when I went in there I took a look at the boiler gage and I saw it had one-quarter of an inch of water showing. I asked one of the colored firemen "How much water do you generally carry in the boiler" and he said he did not know. He told me that he was instructed to fill the wheelbarrow with coal and wheel the coal to the Iron Fireman and dump it in the hopper, and that he did not know a damn thing about the water.

Now the Annapolis Hotel is not the only place where those conditions prevail. We run into that same condition in all these hotels where the public are up against a death trap and they do not know it.

You cannot do without placing responsible licensed firemen in such positions, and there are many places in the same condition as the Annapolis Hotel. I think in the near future we will have that condition remedied at the Annapolis Hotel and other places. As I say they have at that hotel 1 licensed engineer and 5 firemen whose duty consists solely of wheeling coal to the automatic stoker.

Mr. JAMES L. QUINN. What is your name and address?

Mr. NEVILLE. Albert Neville, business agent of the Firemen and Oilers Local No. 63, with offices at 720 Fifth Street NW., Washington, D. C.

Mr. JAMES L. QUINN. Have you ever been a fireman or an engineer?

Mr. AUSTIN. No, sir.

Mr. JONES. Were you paid by the engineers and firemen to try to get a license law through?

Mr. AUSTIN. Yes; I might state my fee has been paid and that I happened to get here by reason of my coming down here to see my friend; the hearing was interesting and so I stayed and looked on. I did, however, attempt to get the opinion of some of those that knew something about it in view of the fact that I communicated with Captain Oram who was the person presented to me, and I did suggest to the first assistant corporation counsel, Mr. Vernon E. West, who suggested that I talk to Captain Oram.

Mr. WOOD. Are you an attorney?

Mr. JAMES L. QUINN. Are you an attorney, solicitor, lawyer, barrister, or counsel?

Mr. AUSTIN. Some of my brothers down there may differ with me, with your generous characterization of me as a lawyer.

Mr. HENRY I. QUINN. Mr. Chairman, there is a gentleman here, an engineer from the school board, who said he would like you to hear some of the practical matters.

Mr. AUSTIN. The board of examiners gets the sum of \$150 a year for the business of examining these applicants for positions of firemen and engineer. If anyone can demonstrate to me that there is a city in this country comparable in size with this city that pays such miserable salaries for conducting that business, I would like to know of it.

Mr. JAMES L. QUINN. I want to ask a question and I want somebody, if they can, to answer. It is generally agreed here and evidently from the evidence submitted it is quite apparent that these two agencies should be divorced. It is the opinion of I do not know whom——

Captain ORAM (interposing). I am the director of inspection of the District of Columbia.

Mr. JAMES L. QUINN. Don't you think it is better to have two men, each one qualified in one particular business, than to have 1 man with a smattering of both lines of work?

Captain ORAM. I would prefer to have 2 men, of course, but we have been limited to 1 man because of administration, for economic reasons resulting from the reduction of the cost of the administration of the service.

Mr. JAMES L. QUINN. Now, I know nothing of the past, but know these accidents have been happening from time to time through lack of inspection or you can call it lack of care. I lost one of my dearest friends through the collapse of a theater due to the lack of inspection. You remember that theater accident. Now, in regard to inspection, in your judgment, what do you think would be sufficient money to properly function in the smoke-control agency of this district?

Captain ORAM. I should think we would need \$25,000 alone, not to be offset by the fees; to have efficient smoke regulation alone.

Mr. JAMES L. QUINN. An agency could be set up here——

Captain ORAM (interposing). With an expenditure of \$25,000.

Mr. JAMES L. QUINN. \$25,000 per year?

Captain ORAM. Yes, sir; per year.

Mr. JAMES L. QUINN. That would give you scientific men?

Captain ORAM. Yes, sir.

Mr. JAMES L. QUINN. Everything else?

Captain ORAM. Yes, sir.

Mr. WOOD. How many inspectors would that require?

Captain ORAM. It would have to be organized and worked up to an efficient point. You would have to start with education to make the public smoke conscious; then we would have this also, a technical organization to examine the plans of all heating plants to see whether they were so designed that they would not be smoke producers and so on.

Mr. JAMES L. QUINN. In that estimate you are taking into consideration the fact that you have a governmental agency here to cooperate with you without any cost to the District?

Captain ORAM. To cooperate as members of the advisory board, to formulate rules and regulations.

Mr. JAMES L. QUINN. Only as an advisory board? Would that give you your facilities and laboratories and things of that kind which are essential without any question?

Captain ORAM. They would if it was necessary.

Mr. JAMES L. QUINN. You would not need to set up a laboratory?

Captain ORAM. No; we would not need to set up a laboratory.

Mr. CHAPMAN. You could not do without one.

Mr. JAMES L. QUINN. I am not familiar with the Bureau of Mines here, but I am at Pittsburgh. Have you equipment sufficient to take care of your needs?

Captain ORAM. I think it is sufficient.

Mr. JAMES L. QUINN. Sufficient for personnel and incidental expenses?

Captain ORAM. Yes, sir.

Mr. JAMES L. QUINN. Now, in regard to boiler-inspection service—what would you say would be the proper allowance for that in your department?

Captain ORAM. That would depend upon what fees we were permitted to charge.

Mr. JAMES L. QUINN. For competent, safe inspection and regulation.

Captain ORAM. It depends entirely upon the fees that the people are willing to pay.

Mr. JAMES L. QUINN. You know your city and the number of people and approximately the number of boilers?

Captain ORAM. I should say that the boiler-inspection features of the bill could be made absolutely self-supporting through fees.

Mr. JAMES L. QUINN. Without imposing a hardship on the taxpayer?

Captain ORAM. Yes, sir; without imposing any higher fees than are paid, due to the fact that under the present system \$5 is charged for one boiler, whether it is in a home or small apartment house or one of the huge boilers at the Pepco plant. There is no differentiation in the fees charged based on the size of the boiler.

Mr. JAMES L. QUINN. Now, you have heard about boiler inspection in this city?

Captain ORAM. Yes; the act of 1873 is the act that we are operating under today. It is the old act of the legislative assembly. It provides for one inspector for steam boilers, including steam boilers for machine shops, and requires a \$5 fee for such inspection. That is the only remaining fee office in the District of Columbia at this time.

Mr. PRETTYMAN. Mr. Chairman, I think I would like at this time to file a copy of the model smoke ordinance.

Mr. JAMES L. QUINN. Without objection, it will be received and made a part of the record.

(The proposed standard ordinance is as follows:)

BUREAU OF MINES PROPOSED STANDARD SMOKE ORDINANCE¹

A tentative draft of a standard smoke-abatement ordinance has been prepared by a joint committee made up of representatives of the American Society of Heating and Ventilating Engineers, the Stoker Manufacturers' Association, the American Civic Association, and the fuels division of the American Society of Mechanical Engineers.

The committee is desirous of obtaining helpful criticism and suggestions about this ordinance, which should be mailed to the chairman, Dr. O. P. Hood, Bureau of Mines, Washington, D. C.

The personnel of the committee is as follows: Dr. O. P. Hood (chairman) and Henry Kreisinger, representing the fuels division of the American Society of Mechanical Engineers; P. J. Dougherty, representing the American Society of Heating and Ventilating Engineers; Lloyd R. Stowe, representing the Stoker Manufacturers' Association; Everett L. Millard, representing the American Civic Association; and Osborn Mennett and Harry B. Meller, members at large.

¹ Reprinted from *Mechanical Engineering* for May 1924.

PROPOSED STANDARD SMOKE ORDINANCE

An ordinance regulating the emission of smoke from any chimney, smokestack, or other source within the corporate limits of the city of _____, creating a bureau of smoke regulation, constituting its personnel, and prescribing penalties for the violation of the provisions thereof.

SECTION 1. Be it ordained and enacted by the city of _____, in council assembled, and it is hereby ordained and enacted by the authority of the same, that there is created a bureau of smoke regulation, the chief of which shall be known as _____².

The mayor shall appoint a _____² at a salary not to exceed _____ per annum. The person so appointed shall be an engineer qualified by training and experience in the theory and practice of the construction and operation of steam boilers and furnaces, and also in the theory and practice of smoke abatement and prevention.

The _____³ may, upon the recommendation of the _____², appoint _____⁴ at a salary not to exceed _____ per annum. The person or persons so appointed shall be engineers, qualified by training and experience in the theory and practice of the construction and operation of steam boilers and furnaces and the firing of furnaces.

The _____³ may appoint such other inspectors and employees in the bureau of smoke regulation as may be necessary for the proper performance of the work of the said bureau, at such salaries as may be fixed by _____⁵.

The mayor shall appoint an advisory board of _____ engineers, who shall act as advisers on engineering questions to the _____² bureau of smoke regulation. The advisory board shall act as a board of appeals, as provided in section 4 of this ordinance. The members shall serve without pay except when acting as a board of appeals, when they shall receive the sum of _____ each per meeting.

SEC. 2. "Persons" shall be considered as referring to all individuals, partnerships, or associations other than corporations.

"Corporations" shall be considered as including all bodies corporate, joint-stock companies, or associations, domestic and foreign, their lessees, assignees, trustees, receivers, and other successors in interest having any of the powers or privileges of corporation not possessed by individuals, partnerships, or unincorporated associations.

"Chart" shall be considered as referring to the Ringlemann Smoke Chart as published and used by the United States Bureau of Mines.

"Stack" shall be defined as including chimneys, smokestacks, structures, and openings of any kind whatsoever capable of emitting smoke. Smokestacks on locomotive roundhouses shall be deemed parts of locomotives beneath them for the time being.

"Advisory board" shall be considered as referring to the board of engineers appointed by the mayor to act as advisers on engineering questions to the bureau chief, bureau of smoke regulation of the city.

SEC. 3. The production or emission within the city of smoke, the density or shade of which is equal to or greater than no. 3 of the Ringlemann Chart, from any stack, except that of a locomotive or steamboat, for a period or for periods aggregating 2 minutes or more in any period of 15 minutes, and the emission of such smoke from any locomotive or steamboat for a period or for periods aggregating 1 minute or more in any period of 8 minutes, is hereby prohibited.

SEC. 4. No person or corporation shall construct, install, reconstruct, alter, or repair any furnace, boiler furnace, stack, or other apparatus connected with stack, unless he or it shall make application in writing to the bureau of smoke regulation on the form furnished by the said bureau, duly sworn to before a notary public, or any person authorized to administer oaths, for a permit for such construction, installation, reconstruction, alteration, or repair, and in and by such application shall give the plans and specifications, showing the style and dimensions of the furnace, boiler furnace, stack, or other apparatus connected with a stack intended to be used, a description of the building or part thereof in which such furnace, boiler furnace, or other apparatus is located,

² May be "bureau chief", "superintendent", "smoke commissioner", or "chief smoke inspector".

³ The mayor or other authority designated by him or by the council.

⁴ May be "deputy" or "Assistant", with any of the designations in (²).

⁵ Usually the council.

including the means provided for regulating the temperature of such building or part thereof and ventilating the same, and generally all provisions made for preventing smoke, together with a statement of the kind of fuel proposed to be used and of the operating requirement to be made of the furnace or furnaces referred to therein, and unless such application shall be passed upon by the bureau of smoke regulation, and approved in writing and a permit issued as hereinafter provided: *Provided, however,* That minor or emergency repairs which do not increase the capacity of such furnace, or which do not involve any substantial alteration in such furnace, boiler furnace, stack, or other apparatus, and which do not involve any alteration in the method or efficiency of smoke prevention, may be made without a permit.

Any application shall be approved or rejected within 10 days after it is filed in the office of the bureau of smoke regulation.

Upon the approval of any application, a copy of which shall be left on file in the office of the bureau of smoke regulation, and upon the payment of the fees hereinafter provided, the bureau of smoke regulation shall issue a permit for the construction, installation, reconstruction, alteration, or repair of such furnace, boiler, furnace, stack, or other apparatus.

In the event that any such application is rejected by the _____², bureau of smoke regulation, the applicant has the right to appeal from his decision to the Advisory Board. Such appeal shall be made in writing to the _____², bureau of smoke regulation, who shall call a special meeting of the advisory board within 3 days for the consideration of the matter. If a majority of the members of the advisory board present shall be of the opinion that the application calls for such construction, installation, reconstruction, alteration, or repair of furnace, boiler furnace, stack, or other apparatus, that there will not under reasonable conditions of operation be produced or emitted from the stack connected therewith such smoke as is herein prohibited, the decision of the _____², bureau of smoke regulation, shall be reversed and the finding of the advisory board shall be binding upon the _____², bureau of smoke regulation; otherwise the same shall be confirmed. In which latter case the fees to the advisory board are to be paid by appellant, who shall first give bond or make other deposit of funds for the amount of the fees provided for in section 1 of this ordinance.

SEC. 5. It shall be unlawful for any engineer, contractor, or other person or corporation to do the work of constructing, installing, reconstructing, altering, or repairing any furnace, boiler furnace, stack, or other apparatus connected with stack, unless the person or corporation for whom such construction, installation, reconstruction, alteration, or repair is being made has proper authority, in the form of a permit from the bureau of smoke regulation, for such work.

SEC. 6. For examination of an application for a permit for any such construction, installation, reconstruction, alteration, or repair, the bureau of smoke regulation shall collect at the time of issuing such permit, for the use of the city, a fee of \$ _____.

The issue and delivery by the bureau of smoke regulation of any such permit shall not be held to exempt the person or corporation to whom the permit has been issued or delivered or who is in possession of the same, or whose application has been approved, from prosecution on account of the production or emission of smoke hereby prohibited.

SEC. 7. The _____², bureau of smoke regulation, shall keep in the office of the bureau of smoke regulation all applications made and a complete record thereof, as well as of all permits issued. He shall also keep a record of all smoke observations on all stacks and generally of the work done by the bureau of smoke regulation. All such records shall be open for inspection by the public at all reasonable times. He shall in all matters pertaining to the enforcement of the provisions of this ordinance report direct to _____².

SEC. 8. The _____², bureau of smoke regulation, his deputies and inspectors shall have the right to enter in the performance of their duties at all reasonable hours all premises from which smoke is being emitted or has been emitted, and any person who shall, after proper identification, deny admittance to such person or persons or interfere with him or them in the performance of his or their duties shall be liable to a fine not exceeding \$ _____ or undergo an imprisonment in the county jail or workhouse of not more than _____, or both, at the discretion of the committing magistrate or alderman.

SEC. 9. If any person or corporation shall violate any one or more of the prohibitions or requirements of this ordinance, the _____

bureau of smoke regulation, shall enter suit before any police magistrate or alderman of the city of -----, and upon conviction such person or corporation shall be subject to a fine or penalty not exceeding ----- for each and every violation thereof, and each day's violation shall constitute a separate offense; or undergo an imprisonment in the county jail or workhouse of not more than ----- or both, at the discretion of the committing magistrate or alderman.

SEC. 10. (a) Each power boiler with more than 1,500 square feet of heating surface, using coal as fuel, shall be provided with a mechanical stoker or other device or attachment approved by the bureau of smoke regulation.

Heating surface shall be construed to mean all boiler surfaces in contact with hot gases.

(b) The minimum distance between dead plate and boiler shall for horizontal return tubular boilers shall be not less than the following according to diameter of boiler:

Diameter of boiler (inches):	Distance, dead plate to shell (inches)	Diameter of boiler (inches):	Distance, dead plate to shell (inches)
48 and less-----	30	72-----	36
54-----	32	78-----	38
60-----	34	84-----	38
66-----	34		

In most cases it is desirable to have more than this minimum.

(c) Where it is proposed to use oil or powdered coal as fuel for horizontal return tubular boilers, the height of the boiler shell above the ashpit shall be not less than 60 inches; in most cases more is desirable.

(d) All hand-fired furnaces for stationary boilers carrying more than ⁶ ----- pounds steam pressure shall be provided with steam-air jets or other approved method of admitting auxiliary air above the grates.

If steam-air jets are used, there shall be one such jet for each 250 square feet of heating surface or fraction thereof, and the minimum number of steam-air jets shall be three.

(e) Boilers carrying not to exceed ⁶ ----- pounds steam pressure shall be provided with openings to admit auxiliary air above the fuel bed, having a free-air opening of not less than 3 square inches for each square foot of grate surface.

(f) All return tubular boiler settings, in addition to steam-air jets and auxiliary air openings, shall have such gas-mixing arches, piers, or other devices as are acceptable to the bureau of smoke regulation.

(g) Full extension furnaces shall be used on all stationary hand-fired vertical fire-tube boilers. The arch of the extension furnace must extend 4 feet behind the grate.

(h) Each hand-fired water-tube boiler of the highly inclined or vertical type shall have full extension furnace with an arch extending at least 4 feet back of the grate and firebrick piers or other acceptable construction installed.

(i) Each chain-grate stoker shall have an ignition arch with minimum length equal to ----- of the length of active grate.*

(j) Side inclined and front overfeed stokers installed under vertically baffled boilers may be set with flush front, provided the minimum distance from grate surface to heating surface is 7½ feet. If minimum distance is less than 7½ feet, a full extension furnace with arch extending 2 feet back of the grate shall be used.

(k) Where side inclined and front overfeed stokers are installed under horizontal return tubular boilers, full extension settings shall be used.

(l) Portable boilers of the vertical or locomotive type shall use "smokeless" fuel unless such boilers are equipped with approved smoke-preventing devices which will insure "smokeless" operation under normal operating conditions.

(m) Low-pressure heating boilers carrying not to exceed ⁶ ----- pounds steam pressure and rated 2,000 square feet or more of steam radiation or 3,000 square feet or more of water radiation shall be of a satisfactory "smokeless" type and

⁶ This will vary according to location. As a matter of fact, the minimum pressure at which steam-air jets are really effective is about 60 pounds.

* In the Illinois district it is the judgment of chain grate engineers that this minimum should be three-fifths and that in no case should the length of arch be less than 5 feet. Further east two-fifths may be sufficient.

capable of reducing the amount of smoke produced so as not to exceed the limit set by section 3.

(n) Low-pressure heating boilers carrying not to exceed ⁷ ——— pounds steam pressure and rated below 2,000 square feet of steam radiation or 3,000 square feet of water radiation and hot-air furnaces with more than 9 square feet of grate surface, if not of a satisfactory "smokeless" type, shall burn only "smokeless" fuel.

(o) All low-pressure boilers shall be provided with openings to admit auxiliary air above the fuel bed, having a free air opening of not less than 3 square inches for each square foot of grate surface.

(p) The projected grate area of any boiler using coal as fuel shall be not less than one-sixtieth of the heating surface where stokers are used and one-forty-fifth of the heating surface in hand-fired furnaces.

(q) The area of the breeching in units not exceeding 1,000 horsepower shall be one-fifth of the grate area.

(r) Unless the height of the flue or stack is greater than 150 feet, the breeching must not drop below the horizontal at any point from boiler to stack.

(s) The unrestricted area through the damper on any water-tube boiler shall be not less than one-fifth of the grate area, and for horizontal-return tubular, internally fired Scotch marine or Continental type boiler shall be not less than 25 percent in excess of the combined inside area of tubes.

(t) All power and heating plants of over 25 horsepower capacity shall be equipped with stack of sufficient height to give a minimum of 0.25-inch draft over the fire in the furnace under normal working conditions.

(u) Kent's formula ($H. P.=3.33 E \sqrt{H}$) may be used to determine the size of the stack. For each right-angle bend in the breeching 10 feet shall be added to the height so determined.

H. P.=Rated boiler horsepower

=Square feet for heating surface÷10 for power boilers

=Square feet of direct radiation (rated capacity)÷100
for steam-heating boilers

=Square feet of direct radiation (rated capacity)÷150
for water-heating boilers

E=Effective area of stack in square feet

= $A-0.6 \sqrt{A}$, when A=actual area in square feet

$\sqrt{E}+4$ in.=Inside dimensions of a square stack

Diameter of

$E+4$ in.=Inside diameter of a round stack

H=Height of stack in feet.

(v) The height of the stack shall be at least 30 times its inside dimension when the height does not exceed 65 feet.

(w) No stack to which a "smokeless" boiler (2,000 square feet or more capacity steam radiation or 3,000 square feet or more capacity water radiation) is attached shall be less than 50 feet high above the center of the breeching connection to the stack.

(x) The inside walls of the stack shall be smoke-tight, vertical, free from offsets, constrictions, or enlargements, and shall have no openings between the breeching and the top of the stack.

(y) The top of the stack shall extend above or be far enough away from any nearby building to avoid downdrafts.

(z) The minimum setting heights of boilers shall be those recommended by the Stoker Manufacturers Association and the Boiler Manufacturers Association in 1922.

SEC. 11. Any ordinance or part of ordinance conflicting with the provisions of this ordinance shall be, and the same is, hereby repealed, so far as the same affects this ordinance.

Mr. JAMES L. QUINN. It is now 2 o'clock, and we regret that we cannot give you the afternoon.

Mr. HENRY I. QUINN. Mr. Chairman, Mr. Green is present and I am sure he would like to be heard. He has handed in his address.

Mr. JAMES L. QUINN. We will be glad to hear Mr. Green.

⁷ May vary in different States. In Pennsylvania, for example, the dividing line between high and low pressure is placed at 15 pounds.

STATEMENT OF W. I. GREEN, ENGINEER, DISTRICT OF COLUMBIA SCHOOL SYSTEM, WASHINGTON, D. C.

Mr. HENRY I. QUINN. May I ask you one or two questions?

Mr. GREEN. Yes.

Mr. HENRY I. QUINN. You are connected with the school system, and are an engineer in one of the schools?

Mr. GREEN. Yes.

Mr. HENRY I. QUINN. And you are familiar with conditions in those schools?

Mr. GREEN. Yes.

Mr. HENRY I. QUINN. Do your men have difficulty in preventing smoke in compliance with the law?

Mr. GREEN. They have very little difficulty, only in the old-style furnaces and I understand they will be replaced this summer.

Mr. JAMES L. QUINN. Whatever trouble you have is due to the school board?

Mr. GREEN. It is not due to the school board, the school board conducts a sort of educational campaign at all times. It receives instructions from at least four competent officers in the school system who instruct you individually if you begin to make smoke.

Mr. JAMES L. QUINN. The school board is all right, is it?

Mr. GREEN. It is O. K. Our members, Mr. Chairman, are in favor of smoke elimination insofar as possible. You may term it "smoke averting."

If you will permit me, Mr. Chairman, I would like to read these general rules for smoke prevention that are found in the Proposed Rules and Regulations to Govern the Work of the Engineer and Engineer-Custodian and the Custodian Force of the Public-School System. The general rules are as follows [reading]:

The fundamental rule of perfect smokeless combustion is a proper mixture of air and gases from fuel in a furnace at high temperature. Anything that will prevent this condition will tend to cause smoke. The rules given are general and should be modified to suit the particular plant, but the fundamental rules should always be borne in mind.

Thickness of fire.—This should depend upon the draft and size of coal being fired. If the fire bed is too thin, too much air will pass through it and the furnace will be chilled; if the fire bed is too thick an insufficient quantity of air will pass through and incomplete combustion will result. The matter of thickness of fire is one that must be left to judgment.

Holes in fire.—There should be no holes through the fire bed. If there are, the resistance of the fire bed is reduced at that point and large quantities of air will stream through into the combustion space, chilling it and causing smoke.

Dirty fires.—The fires should be kept clean of clinkers and ash. The coal thrown on top of large clinkers is shut off from action of the air, so the gas distilled from this coal passes off without being burned. In order to keep the temperature of the combustion chamber high, clean one side of the grates at a time, keeping a brisk fire on the other side.

Frequency in firing.—In hand-fired plants, fire lightly and often, if the coking method is not used, spreading fresh coal evenly and filling all holes and low spots is a good plan. Fire alternate doors. If too large a quantity of fresh coal is thrown in a hot fire, gases are distilled so rapidly for a few minutes that air cannot be mixed with them, and dense black smoke will result. Do not expect to keep smoke down if you load the furnace with coal and pay no more attention to it until the coal is burned. Use the coking method during periods of light loads.

Those are some of the general instructions that are given and which the public-school engineers are supposed to follow. Now, the school engineers are opposed to H. R. 7204, and particularly opposed to two sections of it, namely, section 9 and section 22.

Section 9 (reading) :

No person shall use or cause to be used any steam boiler operating at a pressure in excess of 15 pounds per square inch or any unfired pressure vessel, except domestic hot-water vessels and such other vessels as may be exempted by the Commissioners of the District of Columbia, operating at a pressure in excess of 60 pounds per square inch and having a capacity in excess of 15 gallons, without first having obtained a certificate of inspection from the boiler and smoke inspector.

And, then, section 22 reads (reading) :

All laws or parts of laws relating to smoke abatement or regulation of boiler inspection in conflict with the provisions of this act are hereby repealed.

Mr. Chairman, we have six high-pressure plants in the school system. We have, I believe, 186 schools in the school system, and I believe there are about 25 so-called "low-pressure plants", which the school authorities here class as gravity return, or the old hot-air furnaces. If this bill is enacted into law, it will remove every engineer from all the schools with the exception of the six schools with the high-pressure plants, which will in turn subject such pupils in the schools, as well as the teachers, and the public who may go in and out of the building, to the danger of steam boiler explosions.

Now, Mr. Chairman, we have some figures from the Hartford Steam Boiler Inspection & Insurance Co.—I believe they are about the largest insurance company, at least one of the largest insurance companies in the country that insures steam boilers, and they have here [indicating] pictures of a number of explosions of school boilers. This [indicating] is a newspaper clipping of a boiler explosion in a school, with heavy property damage and loss of life. There are other cases mentioned, and I believe this and other material that I have here would be of interest to the committee. I want to leave it with the committee. The insurance company also furnished us with photographs of devastating boiler explosions, with loss of life and property which has been tremendous, and I would like to leave those with the committee.

Now, from the Hartford Steam Boiler Inspection & Insurance Co. of Hartford, Conn., we have obtained what we believe, Mr. Chairman, to be the only available statistics on steam boiler explosions in the country. We have checked through them and checked the school explosions. We have also checked the so-called "low-pressure boiler" explosions and we find that they comprise about 90 percent of the major steam boiler explosions in the country today.

Mr. HENRY I. QUINN. That is, low pressure?

Mr. GREEN. Yes, sir; the so-called "low-pressure" boilers, which will be removed from the operation of the licensed engineer if this present bill is enacted into law.

Our construction of section 9 is that, being a carefully worded construction, it has been so phrased as to appear innocent; but instead the intent is behind this particular section, by the phrasing of that particular section, to eliminate the low-pressure steam boiler from being operated by licensed engineers.

I wish, Mr. Chairman, to mention particularly the fact that our representatives appealed to Captain Clark, chairman of the committee, for a copy of this bill since January 1, and also for an opportunity to be heard on this bill before it was drafted and sent to Congress, but we were refused, but we notice that a copy of a letter sent out by the Building Owners and Managers Association under date of December 14, I believe, where they had full knowledge of this. We also are reliably informed that the Building Owners and Managers Association of the District of Columbia has been busily engaged in drafting in tentative form to submit to this committee a draft, but whether or not that was submitted to this committee we do not know, but we are confident that it is the thought of the Building Owners and Managers Association to eliminate the licensed engineers. However, I do not think they did it with the full realization of what they are doing. I do not think that they realized that they were going to subject the pupils and teachers of the public schools and the public generally to danger by having these steam boilers operated by unqualified attendants.

Mr. WOOD. Let me ask a question. Your interpretation of this bill is that all of the school buildings in the city except six and all of the apartment houses and hotels with low-pressure boilers would be exempted from having to have licensed engineers?

Mr. GREEN. I believe that about 8 percent of all the apartment houses would come under the provisions of this law.

Mr. PRETTYMAN. I would like to state to the Congressman that we did not anticipate that it would have that effect and eliminate that group of engineers handling low-pressure boilers; but if it actually does, I think it should be changed.

Mr. GREEN. That is the way I interpret it.

Mr. PRETTYMAN. If it does, we will put in an amendment to clarify it, because it was not the intention.

Mr. GREEN. And the only exceptions you will find are "domestic hot-water vessels and such other vessels as may be exempted by the Commissioners of the District of Columbia." I have no doubt it was not the intention to change this act in that respect, but this act, according to us, is susceptible of that construction.

Mr. PRETTYMAN. If the act is susceptible of that construction, we will prepare an amendment to make it clear.

Mr. JAMES L. QUINN. The gentleman, I believe, has excused any motive other than good faith on the part of the framers of the bill. He admits that it was done innocently, and he says that he does not believe that it was done deliberately.

Mr. PRETTYMAN. He mentioned the point, and I think that ought to be cleared up.

Mr. WOOD. But it does necessarily carry an inference, but not necessarily that there was an ulterior motive.

Mr. JAMES L. QUINN. It was simply one of those things that was overlooked and it was not realized as to its importance to the schools, and naturally, having no preliminary experience in regard to it, that point was not brought out, but as Mr. Prettyman says, they do not want to endanger the lives of the children or of anyone else.

Mr. JAMES L. QUINN. It was simply one of those things that was overlooking that particular thing was because there was not a prac-

tical man serving on that committee. No practical man would have ever approved of that. In fact, the only practical man, in our opinion, a practical operating engineer who is qualified, and who is an employee and a public official of the District of Columbia, namely, the boiler inspector of the District of Columbia, was not appointed on that committee.

Mr. JAMES L. QUINN. Do you know whether or not he was consulted?

Mr. GREEN. Well, to the best of our knowledge, he was not consulted.

Mr. JAMES L. QUINN. And you believe that is the reason for the defect of this bill?

Mr. GREEN. Yes; certainly a practical man would not have overlooked such an important issue as that, although a practical man may not have been qualified to devise that particular worded construction or look over it, as it were.

Mr. HENRY I. QUINN. Do you think that the present law, if properly enforced, would answer everything needed in respect to our school properties?

Mr. GREEN. I do; in fact, I do not believe an additional inspector is needed. We know the present boiler inspector is a very efficient, competent man in his particular position, and that 8 years ago when he came into office he had to get to work and had a tremendous task ahead of him.

Mr. HENRY I. QUINN. Do you think one man is capable of covering the District?

Mr. GREEN. If the citizens of the District of Columbia——

Mr. HENRY I. QUINN (interposing). You are talking about boiler inspection?

Mr. GREEN. Yes.

Mr. HENRY I. QUINN. How about smoke inspection?

Mr. GREEN. I do not; it requires a constant vigilance to keep down smoke.

Mr. JAMES L. QUINN. Well, then it is your idea that we do not need any money for the smoke inspection end of it, and that agency can be made effective by taking the smoke stuff out of it and putting it into a separate agency. Is that your idea?

Mr. GREEN. That is my idea, Mr. Chairman; and they do not need any more boiler inspectors.

Mr. JAMES L. QUINN. Evidently it can be made self-supporting. That is the District's contention.

Mr. PRETTYMAN. But even so, Mr. Chairman, all those fees have to be appropriated out again. We cannot pay them unless the money is paid out of the Treasury by appropriation. Congress must say how much money we can appropriate; it goes to the General Treasury and it must be appropriated even though the service may be self-supporting.

Mr. GREEN. Mr. Chairman, personally I am not qualified to discuss that phase of it.

Mr. JAMES L. QUINN. Well, if there is nothing else, I will say that, in the opinion of the committee, this is the final meeting.

Mrs. VIRGINIA JENCKES,

Chairman Special Committee on Smoke Control for District of Columbia:

In connection with my brief statement at the hearing on April 16 and your comment that such a result might happen in a hundred years.

On the contrary we have now reached the point in the transformation wrought by the machine age when we have all the facilities at hand enabling us to fly into the power age with amazing rapidity.

The building of a great central power plant suggested midway between Washington and Baltimore on Chesapeake Bay could be done easily in 3 to 5 years. The byproducts derived from such a plant would enable light, power, and electric heat to be priced at any figure chosen, even given away.

However, the general plans suggested to get us out of the depression and speed us into the power age, into a world of giants—the giant “Uncle Sam”, have already been submitted to the President—part as early as December 1933, and a further outline in May 1934, by U. S. Engineers, Inc.

We hereby request it be inserted in the record so an intelligent idea can be had of its nature and some of the tremendous results gained thereby. It is an attempt to outline a plan for Senate Resolution 164, Seventy-third Congress.

The technical experts of four Cabinet officers were working on plans to carry out this resolution to take over 100 years, now available in several bulky volumes.

The plan we presented to the President on May 17, 1934, was outlined in less than four pages in 21 points, A to U inclusive.

Those or better than them must soon be started. Their realization is not only possible, those or better are inevitable.

U. S. ENGINEERS, INC.,

W. EDWARD NEWBERT,

Professional Engineer, New York State, Representative Agent.

THE SEVENTY-FIFTH PARTY—THE PROGRESS PARTY

Slogan.—War against Nature, to conquer her, control her, and transform her into a willing mistress in the service of mankind.

To draft all the forces of society available in men, machinery, and management in a common purpose, in a perpetual campaign, never ceasing until the earth has been transformed and “Thy kingdom come, Thy will be done, on earth as it is in Heaven.”

Statement of purpose.—The time has arrived to promulgate a new declaration of independence in these United States of America.

“We hold these truths to be self-evident, that all men are created free and equal and endowed with certain inalienable rights, among which are life, liberty, and pursuit of happiness, and for the securing of these governments are instituted among men deriving their just powers from the consent of the governed.”

Pioneering on this continent from the Atlantic to the Pacific, seizing, occupying, and holding the choice areas of North America, we have had an opportunity, growing from a handful of settlers to over 122 millions, to push forth as conditions in more settled areas became intolerable or burdensome, to spread over unoccupied lands, and—under rugged individualism, the free play of initiative and enterprise, the grasping, grabbing, and skimming the cream from unrivaled natural resources—to make this the richest and fullest developed by the modern machine process of any part of the earth's surface.

In doing it great industries have been built up, unrivaled systems of transportation and communication created, and the capacity to produce beyond the bounds of the supremest wants and desires of us all are awaiting fulfillment. And now what is the next step?

“New occasions teach new duties,
Time makes ancient Truth uncouth,
They must up and ever onward
Who would keep abreast of Truth.”

One thing primarily, this country has differed from others in our unique growth from a primitive wilderness, has been a two-party system, which, by and large, with all its faults, has enabled us to make definite decisions polit-

ically. With the limitations, all of us endowed with one-track minds, this process in politics has enabled few and only momentous decisions to be arrived at, following the great changes in the field of free competition to establish the political change after the fact in the economic realm.

Though this rough-and-ready process plunged this country into the greatest civil war of modern times, we as a nation have passed through the fiery furnace of trial and tribulation and emerged with ever greater strength and unity in the play of social forces toward a common end.

Withal we are a people of the intensest sentiments—the play of patriotism, the intense devotion to and veneration of the founders of the Republic. Among these minor sentiments some look upon their membership in the Democratic Party, of Jefferson and Jackson, Cleveland and Wilson, as something to be proud of; while others, adhering to the Republican Party, of Lincoln and Grant, McKinley and Theodore Roosevelt, equally feel proud of that membership. Recent terms of Congress have shown more and more disposition by Members and Presidents to find common ground, with less resort to merely partisan bias.

Hence the Progress Party calls upon all citizens, without regard to previous party affiliations, as well as the great mass of independent voters, who in recent years have determined election results by unprecedented landslides in an effort to find some course to follow politically, leading to the “new deal” that promised to get us somewhere.

Pursuant to this purpose, we herewith present the following platform of the Progress Party:

PLANK I

New declaration of independence.—No life, liberty, and the pursuit of happiness is any more possible to all of United States without an assured certain income for every citizen arriving at majority and extending throughout life. Therefore the United States establishes a universal yearly salary in six categories, beginning at \$1,500 yearly minimum, first category, common labor.

Second category, \$3,000 yearly, foremen and skilled labor, one-tenth in number of first category.

Third category, \$6,000 yearly, superintendents, etc., one-tenth of second category.

Fourth category, \$12,000 yearly, managers, scientists, etc., one-tenth of third category.

Fifth category, \$25,000 yearly, such as directors and heads of well-managed industries, transportation, communications, Members of Congress, judges, Governors, heads of large cities, labor leaders, foremost professional men, etc., one-tenth of fourth category.

Sixth category, \$50,000 yearly, one-tenth of fifth category, less than 1,000 in the United States who can spell “ablest”; designation not necessary.

Multimillionaires over \$50,000 yearly income outside of categories, including President of the United States.

PLANK II

With the unlimited capacity of the modern machinery of production, every citizen in the six categories shall receive a yearly increment in salary raise of 6 percent and a bonus doubling the salary at the end of each consecutive 10 years. All citizens of whatever occupation unable to make a minimum income of \$1,500 yearly put in Government employment on public works.

PLANK III

All persons, partnerships, and corporations managed so as to be able to pay minimum salaries in the different categories to employees, with increments from year to year, to continue in free and fair competition with no restrictions as to any improvements and/or consolidations for more efficient and better service.

PLANK IV

All minors placed in universal service for 3 years, 18 at \$600 a year, 19 at \$900 a year, 20 at \$1,200 a year. Service may be in private and/or public employment to secure the best training and experience. At 21 minimum of \$1,500 or higher if they have qualified therefor.

PLANK V

Poll tax, \$150 a year on all citizens over 21. Unchanged for 10 years while increments are increasing salaries. Raised to \$300 a year on increase to \$3,000 a year minimum at the beginning of second 10 years. Or a poll tax on all citizens equivalent to 10 percent on each doubling of minimum salary.

Income tax of 10 percent on all incomes in categories 2 to 6, inclusive, varying every year according to increasing salaries. Income tax of 20 percent on all incomes over \$50,000.

Tax-exempt bonds done away with; levy of one-half of 1 percent on all bonds in whatever amount held by anyone. General sales tax of 2 percent. Internal revenue and tariffs on same general basis as previously laid.

PLANK VI

To establish an equitable, well-balanced growth and development of the whole of the United States, eliminating all unnecessary duplications and expense, giving the best results to all in every part of the United States, all State, municipal, and local taxes are abolished, and the sums needed to carry on all State, municipal, and local activities apportioned out of the income of the United States so as to give to every part of the country the very best results for the benefit of each of United States separately and all of United States jointly.

PLANK VII

Capital investment by United States in largest projects at lowest unit costs—dams for "white coal" potable water, irrigation, and fisheries. Ditches for canalizing and lake connections. Drains to transform swamps into finest garden and farming areas, rented to ablest farmers and gardeners at rents beyond competition. Terracing of mountains, irrigation of arid lands. Forestation of all lands not otherwise better used on largest scale by United States at lowest unit cost. United States owning and renting to users.

United States capital investment at greatest speed consistent with good workmanship in heat- and cold-proof, fire- and flood-proof, tornado, hurricane- and earthquake-proof structures, the best built on the largest scale at the lowest unit cost, rented for residence, business, industries, warehouses, and other purposes. United States the landlord.

PLANK VIII

United States progressively reinvesting obsolescence, salvaging, and transforming United States industry and methods of production by issuing 3-percent United States bonds with 2-percent amortization, giving ownership in fee simple by United States in 50 years.

United States loans to private enterprises, farmers, industries, transportation, communications, mining, etc., of demonstrated merit at 5 percent on a 20-year basis, renewals where success renders them desirable. United States landlord.

PLANK IX

Universal 6-hour day, 5-day week established in all Government and private works for all employees. Four daily shifts of 6 hours and a stagger system wherever more efficiency at less cost is obtained by use of automatic machinery, processes, and/or continuous operation.

PLANK X

Until complete world disarmament the maintenance of Army, Navy, and air forces for defense superior to that of any other world power.

PLANK XI

All citizens of the United States to be registered with individual yearly identification papers supplied. All aliens in the United States shall have 10 years to complete naturalization from their date of entry. On failure to do so at the end of 10 years, to be returned to the country of origin. Whenever the construction projects in the United States exceed the amount of labor available, alien laborers

under their foremen may be brought in to serve not more than 5 years continuously at a salary greater than the country of origin but less than in effect for United States workers. Such work shall be confined to that not considered essential from its character for the defense of the country and preferably such as would give the aliens the best training in those special public works their own country could most benefit through their experience on their return.

PLANK XII

As a means of stabilizing prices, more necessary safeguarding unforeseen demands in time of peace as well as urgent necessity in time of war, all metals and materials that can be stored without deterioration indefinitely shall be acquired from mines or other producers by United States and stored in safest structures, location concealed, in at least 10 years' supply as of current use. "A store is no sore."

PLANK XIII. EDUCATION

Establishment of a universal system of education in which every child from its earliest years shall have Boy Scout and Girl Camp Fire training in camps established all over the United States and possessions so every child shall have contact and experience growing up in every part of the United States.

All scoutmasters and Girl Camp Fire matrons to be drawn from the citizens at retirement age of 65 from such as indicate special fitness and love of this work and best liked and appreciated by the children. The teaching and administrative staff in all phases of education up to universal service at 18 also drawn from the ablest leaders of society at retirement age whose outstanding accomplishments render their advice and counsel invaluable. The independent incomes of all citizens at retirement giving no incentive to take up the work except interest and ability. The aim shall be to secure in the greatest measure self-made men and women with economic self-reliance and self-support in the process of education.

A department of education with a secretary of education, a new Cabinet officer, to be the head under the President.

PLANK XIV

The United States shall have the sole power to coin money and regulate the value thereof.

The assumption of some of these functions through private credit proving its incapacity to produce the best results, the United States extends the Postal Savings banks to merge all mutual savings, commercial, investment, and private banking, life and fire insurance, brokerage and stock exchanges, mutual loan and mutual building associations into the great United States house of finance. Every officer and employee of the present organizations merged, apportioned their particular work in the institution according to their demonstrated functions and abilities.

PLANK XV

Foreign commerce controlled directly by the United States based on the principle of exchange of all commodities to the fullest degree for the mutual benefit of the United States and the country exchanged with. The process of foreign exchange to be a function of the United States house of finance so a fair deal for all may be secured, as the program now with gold and silver gives indication of success.

PLANK XVI

Amendment to United States constitution for initiative, referendum, imperative mandate, recall, and direct election of President and Vice President by popular vote.

PLANK XVII

Criminals with anti-social, atavistic complexes justifying life imprisonment to be confined in remote island institutions under charge of the United States; one in the Pacific Island of Guam and one in the Atlantic on the most inaccessible

sible of the Virgin Islands. While safeguarding society by such inaccessible segregation, scientific research to be made of them to extend the knowledge of psychology and discover the best methods of control and prevention.

PLANK XVIII

To provide data for the exhaustive planning, estimate and comparison of every project on the land surface of the United States and a necessary preliminary to an extensive series of test drillings 2 miles or more in depth in at least 10-mile squares all over the United States to get comprehensive accurate data of the geological resources of the country, the completion of the typographic surveys and topographic contour maps of the United States in their entirety shall be placed first on the calendar as the most urgent task to complete with the greatest speed consistent with accuracy.

PLANK XIX

Extension of research and laboratory functions of United States Departments, Bureau of Standards, and other. All previous inventions to be culled over for overlooked inventions worthwhile, and all new inventions and discoveries to come to these agencies for careful test and comparison. The United States sitting in and participating in returns from all patents and discoveries granted by the Patent Office up to 5 percent of actual profits therein.

PLANK XX

Great American competition.—Two billion dollars in prizes. Every person able to read and write over 13 years of age, eligible and required to compete. Everyone to receive at least \$10 to \$5,000,000, the grand prize. Data from which great American plan is derived to run the United States for next 40 years. Plans submitted by secret Australian ballot system. Names kept in United States secret archives.

Thereafter system of yearly awards established for suggestions of improvements and changes that may be adopted making an elastic plan capable of healthy growth.

PLANK XXI

Building of great air rafts to remain in and travel exclusively in the stratosphere with suitable floating stratostations near the great centers of population in the United States. Their extension for a world system of transportation as fast as helium can be obtained from the United States and/or elsewhere.

The heavier-than-air craft with air-tight cabins forming loading and unloading elevator service. These air transport facilities shall be kept under the sole ownership and control of the United States.

U. S. ENGINEERS, INC.

MAY 17, 1934.

HON. FRANKLIN D. ROOSEVELT,
White House, Washington, D. C.

DEAR MR. PRESIDENT: Herewith copy of Senator Norris' Senate Resolution No. 164 with 21 suggested points to plan giving some of the implications and extent a faithful attempt to carry it out would lead us to.

Its passage by the Senate and the little work you have done on it since is the one greatest event since you took office. What, after all, are the others but parts of "the experiment" that demonstrate most completely that they are "incompetent, irrelevant, and immaterial", while resolution no. 164 is the start to take us into a new world not through a rejection of capitalism but through supercapitalism to the nth power, completing its destined task in this land chosen by manifest destiny for its highest fruition.

We cannot after the 15 months much longer persist in "progress within the framework of the existing system of private enterprise and private profits", but rather under Senate Resolution 164 the path is made plain under supercapitalism to advance "a law of necessity in capitalism that obliges it to employ its profits toward the future, so there is a law of power that forbids those who possess it to rest upon it; for if they do they will lose it; and then a law of

life that compels strong and virile nations to go competing for power. The one most resolute to go on with the method we talk so lightly of giving up, would, if we did give it up, very soon pass us and take that command of the world which belongs to one people at a time.

Simply perhaps in anticlimax it must be said in conclusion, "There is nothing too big to do that we can do, and if we can make it pay to do we must finally do it or sink into oblivion."

None of the 21 suggestions A to U appended to resolution 164 are too big to do—they all can be made to pay to do. If there are any bigger and better than they they will simply displace them. Grim necessity will force us to adopt them.

Yours respectfully,

W. EDWARD NEWBERT,

Professor Engineer, New York State.

General delivery—Washington, D. C., and New York City.

[S. Res. 164, 73d Cong. 2d sess.]

Resolved, That the President be, and he is hereby, requested to send to the Senate a comprehensive plan for the improvement and development of the rivers of the United States, with a view of giving to Congress information for its guidance in legislation which will provide for the maximum amount of flood control, navigation, irrigation, and development of hydroelectric power.

Senator Norris, change "control" to "prevention." 111 S. E.

A

We will make a plan conforming to S. Res. 164 for the next 50 years.

We will set all labor to work at continuously increasing salaries.

Capital reinvested in soundest securities in Uncle Sam's projects.

We dam, ditch, and drain.

Universal terraced lakes, stocked with fish, hydroelectric power, terraced mountains, forestation, irrigation, new soil supreme.

Safest structures sheltering all of United States.

All under giants of modern progress. Let's go!

B

Let the Rushmore contest inscribe in imperishable stone the best memorial of the American people for the significant events and expansion of their country to 1934.

Closing up the epic of the past, let the United States open a greater volume.

Our ancestors did themselves proud in a Lilliputian world—a world of midgets.

Now let us hasten into the land of giants ahead. Uncle Sam, the sleeping giant, awakes.

C

Maximum, the limit, i. e., a great seaway across Florida, the Mississippi River from St. Louis to the Gulf, like the Riker project, each finally 3 miles wide and over 300 feet deep.

Alluvium from the Mississippi River mixed with pulverized phosphate of lime from the Florida seaway, making the new soil of incredible fertility, distributed and leased at lowest cost around every city and on mountain terraces, defrays the entire cost. Let's start.

D

A great task needing all the forces of men, machinery, and management for the next 50 years.

Merge Democrats, Republicans, Farmer-Laborites, and the great masses of independents on the platform of the new progress party through which capital, labor agriculture, transportation, and communication, including radio and movies, are concentrated and cooperating unitedly on this project of the great giant, Uncle Sam.

E

From 150,000 to 200,000 dams required in the United States, converting all streams into lakes from a few acres in extent to the greatest.

The smaller dams to be built by Boy and Girl Scouts for scout camps; larger ones by local groups for private use and public parks.

The largest dams to be constructed by the United States in a great system of terraced lakes in the several States, connecting with lakes in Canada and Mexico, and extending from Central America to Alaska.

F

Dams from 50 to 1,000 feet in height, of the Ambursen water-tight apron type with lake side on 2 to 1 slope, roadway on top, downstream face vertical, and metal trussing in box construction making a hollow structure to be utilized for factories, stores, warehouses, etc. Same also to be used for dam fine apartments. Thus cost of dams can be largely charged to rentals by United States.

G

"Maximum amount of * * * development of hydroelectric power", requires greatest terraced lakes the land topography permits and puts great number of cities and towns under water, as well as low parts of some large cities.

Combination of "Ambursen" hollow dams and hollow mountain terraces transfers people to new structures where best air conditioning and finest living facilities may be built on the largest scale at the lowest rentals by the United States.

H

The program of putting people in new structures, determined by great terraced lakes, from their greater desirability, renders all other present structures obsolescent. Reconstruction for all other cities, towns, villages, and other individual residences becomes essential. On the largest scale, the best at the lowest unit cost is obtained, rented by United States at the lowest rates, finally making United States the only landlord.

I

Great terraced lakes at their maximum puts large part of railroad and highway mileage under water.

The plan to follow in this emergency is to develop a helium transport service in the stratosphere with heavier-than-air express in cooperation, doing away with railroad and ocean shipping by the better, faster safer transportation in the air.

The United States' monopoly of helium makes the United States master of the air.

J

Primitive civilizations terraced the Andes by low, rubble walls with trickling mountain streams for irrigation.

Great terraced lakes created by United States, giant of the machine age, finally completes terraces of America to highest peaks covered with richest soil. Terraces from 25 feet to heights rivaling skyscrapers, and hollow for terraced cities accommodating untold billions. A task lasting for centuries.

K

The great terraced lakes, interconnected on same levels, make necessary the L. W. C.'s, universal land and water carriers from family sizes for pleasure to gigantic freight transports exceeding 2,000,000 tons gross, carrying vast tonnages on land or water at low speed, like tramp steamers, and at nominal rates, uniform for all distances like postage. Plans ready when needed, starting as rich soil carriers.

L

Requiring intensive prosecution for 50 years of the entire man power, machinery, and management of the United States; a universal pay roll of all from 21 to death is established starting at a minimum yearly salary of \$1,500 in six categories to \$50,000. All the complications of life insurance, pensions, etc., are eliminated by the United States taking all the risks for all citizens. (See plank I, Progressive Party.)

M

With the unlimited capacity of the modern machinery of production, every citizen in the six categories shall receive a yearly increment in salary raise of 6 percent and a bonus doubling the salary at the end of each consecutive 10 years.

All citizens of whatever occupation unable to make a minimum income of \$1,500 yearly, to be put in Government employment on public works. (See plank II, Progress Party.)

N

This resolution requiring fullest freedom to compete fairly under the N. R. A.:

"All persons, partnerships, and corporations managed so as to be able to pay minimum salaries in the different categories to employees, with increments from year to year, to continue in free and fair competition with no restrictions to any improvements and/or consolidations for more efficient and better service." (See plank III, Progress Party.)

O

Program under resolution requiring intensive training of youth:

"All minors placed in universal service for 3 years, age 18 at \$600 a year, age 19 at \$900 a year, and age 20 at \$1,200 a year. Service may be in private and/or public employment to secure the best training and experience. At age 21 the minimum of \$1,500 a year or higher if qualified therefor." (See plank IV, Progress Party.)

P

"As a means of stabilizing prices, safeguarding unforeseen demands in time of peace, as well as urgent necessity in time of war, all metals and other materials that can be stored indefinitely without deterioration, shall be acquired from mines or other producers by the United States and stored in safest structures, location concealed, in at least 10 years' supply as of current use. 'A store is no sore.'" (See plank XII, Progress Party.)

Q

An emergency existing for at least 50 years, with all the resources of the country concentrated on great public works under S. Res. 164, it becomes of vital necessity to merge all institutions of finance into the great United States house of finance to coordinate and cooperate in all their functions to the one common end. (See plank XIV, Progress Party.)

R

Foreign commerce controlled directly by the United States based on the principle of the exchange of all commodities to the fullest degree for the mutual benefit of the United States and the countries with whom such exchanges are made.

The process of foreign exchange to be a function of the United States house of finance so that a fair deal for all may be secured, just as the program now with gold and silver gives indication of success. (See plank XV, Progress Party.)

S

Most urgent for immediate completion: "To provide data for the exhaustive planning, estimate, and comparison of every project on the land surface of the United States—the completion of the topographic surveys and topographic

contour maps of the United States, in their entirety, shall be placed first on the calendar as the most urgent task to complete with the greatest speed consistent with accuracy." (See plank XVIII, Progress Party.)

T

Of vital importance: "Extension of research and laboratory functions of the Bureau of Standards, United States Departments, and others. All previous Patent Office filings to be culled over for overlooked worthwhile inventions; and all new inventions and discoveries to come before these agencies for careful tests and comparison. The United States sitting in and participating in returns from all patents and discoveries up to 5 percent of actual profits therein." (See plank XIX, Progress Party.)

U

Analogy: Capital and labor chasing each other around in a circle inside a high, tight, sharp pointed, picket board fence, each trying to get more than there is from a common trough.

Senator Norris' resolution knocks a wide board off the fence so we can crawl through and get no end of room and new troughs with supply ample to fill them for all.

Let capital and labor crawl through their fence of limitations, spread out, and dig.

U. S. ENGINEERS, INC.

NATIONAL COAL ASSOCIATION,
Washington, D. C., April 16, 1935.

Memorandum re April 16 hearing on District of Columbia smoke bills—H. R. 6232 and H. R. 7204.

Before a subcommittee of the Committee on the District of Columbia composed of Representatives Jenckes of Indiana (chairman), Wood of Wisconsin, and Quinn of Pennsylvania.

The first witness was Dr. O. P. Hood, chief of the technologic branch of the United States Bureau of Mines. He stressed the Bureau's interest in the question of smoke abatement and presented his statement in the form of a letter of advice. He defined smoke, as used now, to include the discharge of gases and soot as well as fly ash or any other objectionable matter. He reiterated his published statement made several years ago, that any fuel can be burned smokelessly with proper equipment and proper firing, and pointed out that it is unreasonable to attempt to give any one fuel a monopoly, even though that particular fuel may be entirely smokeless in its combustion. Further, that, concisely, any fuel will smoke when fired improperly. He referred at length to the necessity for economy of operation and called the attention of the committee to the fact that the consumer could not be expected to use a particular fuel that would be smokeless under all circumstances unless the price level of that fuel was brought down to the level of the most economical fuel available. He approved the engineering approach to smoke abatement and urged that consideration be given to an educational program to be placed in effect to show the proper methods of smokeless firing. The speaker also favored rigid control of new equipment.

At this point Representative Jenckes said that she felt that a program of education would go a long way toward smoke abatement.

The next witness was from the Brotherhood of Locomotive Engineers. He pointed out that smoke could not be entirely eliminated at all times from railroad locomotives even with the best of equipment. He urged an amendment which had for its purpose the exempting of railroad labor from any fines that might be imposed for smoke violation. His testimony was endorsed by the legislative representative of the same organization.

A lawyer for the Federation of Citizens' Associations of Washington, D. C., expressed the opinion that H. R. 6232 was unconstitutional for the reason that the word "unnecessary" would be unenforceable in a penal statute. He further opined that the proper procedure would be the amendment of the present smoke law to provide for additional enforcing personnel. Another representative of this Federation favored H. R. 6232 with certain amendments to define the word "unnecessary." These remarks brought out dissention in the federation. It

seems that certain of the civic associations favor and certain oppose the measures with definite action having not as yet been taken on either.

One J. J. Haas made personal remarks concerning the polluted air in the Capital and made direct reference to need for some sort of regulation to cover the operation of municipal incinerators.

One Mr. Newbert then urged the use of electricity for heat. He pointed out to the committee that he could show them whereby, by the establishment of a gigantic plant near Washington, electricity for heating purposes made from the byproducts of coal could be furnished without cost. He was requested to file his plans with the committee for their study.

The next witness, representing a suburban citizens' association, said that in his opinion neither bill was any good, that the proper procedure was the amendment of the present law, among other things, to include boats, railroad equipment, and residences.

Dr. R. R. Sayers concurred in the statement of Dr. Hood, referring at some length to the activities of the United States Public Health Service, with which he is connected, in smoke abatement work. He offered the cooperation of that organization and said that they had uncovered no information which would indicate that there is any relation between smoky atmosphere and the health of a municipality.

A representative of the International Union of Stationary Engineers opposed both bills.

Dave Chapman, assistant to the president of the Carter Coal Co., Washington, D. C., and formerly director of smoke inspection of the Commonwealth of Massachusetts, gave the committee the benefit of his experience in smoke abatement work in Boston. He reiterated the statement previously made, that any fuel could be burned smokelessly with the proper firing and proper equipment, further saying that one way in which to actively promote smoke abatement work would be the elimination of the use of high volatile coal when low volatile coal is available.

The next witness was Z. C. Wagoner, of the engineering staff of Appalachian Coals, Inc. He gave the endorsement of that organization to the general work of smoke abatement, also endorsing the remarks of Dr. Hood. He pointed out to the committee that by proper firing and proper equipment, smokeless combustion could be obtained with any fuel, and then called particular attention to the fact that economy in operation must be left to the discretion of the consumer; in other words, that no bill should be enacted that would specify any particular type of burning equipment or fuel. He voiced opposition to the pending measures inasmuch as they contain no provisions for an educational program and propose to delegate almost unlimited power to the Commissioners of the District of Columbia without regulation. He then told the committee that in his opinion the present law, coupled with a vigorous educational campaign on the part of the civic associations that are sponsoring the measures under consideration, would bring about the desired effect in smoke abatement.

The board of trade favored H. R. 7204 with amendments.

The next witness was the author of H. R. 7204 who is of counsel for the District of Columbia Commissioners. He, of course, urged enactment of that measure but said that the desired effect could be obtained, in his opinion, if they would amend the present law to include residences, some tolerance in the way of violations, additional personnel, and some means of corrective education and administration.

A Mr. Hamilton, representing the Baltimore & Ohio and the Pennsylvania Railroads, said that those roads were in substantial agreement with the District officials on H. R. 7204, with certain amendments. He pointed out that for 12 years four of the roads operating in the district had cooperated in the elimination of smoke and that they had made marked progress. With regard to the boiler inspection section of the proposed bill, he said that was now covered under the Interstate Commerce Commission law, insofar as the railroads were concerned.

An employee of the Bureau of Standards, speaking only in his capacity as a citizen, favored H. R. 7204 and urged upon the committee that existing governmental agencies should be consulted and cooperate in such work as is undertaken.

The National Association of Power Engineers objected to both bills and favored the present bill properly enforced.

From this point on, there was considerable discussion by various labor folks, real-estate men, and those interested, but it was not of sufficient importance to bear commenting on.

At this point the committee adjourned subject to the call of the chairman.

The committee, of course, gave no expression of opinion as to any action that it might take, but it seems evident from the tenor of the questions asked and the points brought out that at least two members of the subcommittee favor the amendment of the present smoke law to include all boilers and make available sufficient funds for personnel to properly enforce that law.

J. D. BATTLE,
Executive Secretary.

PUBLIC UTILITIES COMMISSION OF THE DISTRICT OF COLUMBIA,
MRS. MARY T. NORTON, *District Building, April 5, 1935.*
House of Representatives, Washington, D. C.

MY DEAR MRS. NORTON: At the earnest and repeated request of a large number of prominent residents and civic workers of the District of Columbia, I drafted and transmitted to you on February 25, 1935, a bill to prevent fouling of the atmosphere of the District of Columbia. You were so kind as to introduce this bill, which became H. R. 6232. The bill was accompanied by a careful memorandum setting forth briefly the necessity for legislation and the reasons for the simple form of the bill.

Thereafter I was advised that a committee composed in part of District officials and in part of interested lay persons had been engaged in the preparation of a bill which had as its incidental purpose the regulation of smoke nuisances. Upon this advice I, of course, consented to the postponement of hearings until the proposed bill could be redrafted for submission, as my only object was to secure adequate legislation to cure an admitted menace to health and comfort; and for this purpose I desired to cooperate with anyone interested from the same point of view.

I have at hand a copy of the new bill which you introduced, by request, on April 2, 1935. With a desire to aid the committee in a draft of legislation satisfactory to the District people, I submit the following comments on the new bill and a number of comparisons. It may be that a number of the defects which appear to be present are the result of the necessity for haste in draftsmanship and can be eliminated. On some points of policy, however, there is no doubt but that the committee will have to exercise its own judgment.

The specific points are set forth hereafter in numerical order:

1. Although the title of the bill indicates its intention to control noxious gases, section 2 limits the "smoke provisions" by the use of the word "stack", as defined to the regulation of smoke. This may be observed also in section 6, which is the prohibitory section and tests smoke, fly ash, or fumes only by a color chart. Obviously, many noxious gases, when emitted, are of light color, as for example those produced by the domestic and commercial incinerators.

2. H. R. 7204 tests all smoke produced from private homes, locomotives, commercial dwellings, gas plants, or elsewhere "from any stack" by No. 3 Ringleman Smoke Chart, qualified by the clause "or which is so dense as to prevent seeing through it at the point of emission into the external air." The same standards which can be applied to commercial plants with engineers in attendance with heavy consumption of fuel are not applicable to homes which are fired usually but twice daily and which are unprepared for any sudden imposition of a drastic standard.

3. H. R. 7204 has but three paragraphs which refer directly to smoke regulation, paragraphs 2 and 6, and the enforcement paragraph applicable to the entire bill, paragraph 20. It is, therefore, predominantly a boiler-inspection bill, the principal purpose of which is to transfer jurisdiction over boiler inspection and installation to a new board called the "Boiler and Smoke Advisory Board." H. R. 6232, on the contrary, is entirely devoted to the improvement of smoke regulation.

4. The boiler and smoke advisory board has inconsistent provisions of appointment since it insists that at least two members shall be mechanical engineers with "broad experience in the design and operation of heating and fuel-burning installations", and at the same time provides that they have "no financial interest in the manufacture or sale of any combustion or smoke-abatement device, or any fuel." Since the maximum salary of these men is \$250 per annum, it is difficult to see how they can be obtained when they can have no financial interest in the subject of their principal employment. This board also sets up a cumbersome and dangerous additional step which will tie the hand of the proposed boiler and smoke inspector and might well be the resort of persons having antipublic interests. This results from the fact

that it shall "advise" the inspector and also serve as a board of appeals from him. In effect it would be the court of last resort in all matters arising under the bill, and the recourse to the Commissioners would be a nonentity.

5. Section 7 requires permits to construct or alter, section 8 requires certificates for use after construction or reconstruction and section 9 requires certificates covering in all practically every fire-containing device in the District of Columbia in private homes, commercial dwellings or elsewhere, all defined as connected with a stack and the extent of the inspection necessary at once under these provisions is so tremendous as to make it imperative that practically all equipment for a considerable period after the passage of this bill must be granted certificates without inspection by a great cost in the aggregate to the citizens of the District of Columbia. Some method for preserving the validity of certificates already issued for boilers until new inspection can be completed should be devised.

6. Section 9 in effect exempts all domestic hot-water vessels as through inadvertence which qualified both fire and unfired vessels operating at pressures of 15 pounds per square inch and all hot-water vessels operate at such pressures. The language should be clarified to exempt only unfired hot-water vessels if that be its intention. The question also arises as to whether or not electric-heated steam-producing or other heating devices should not be included under the bill. This section also in general language permits the exemption by the Commissioners of the District of Columbia of any vessel covered by the bill, a dangerous provision legally when unqualified.

7. *Policing by private interests.*—By section 11, page 6, line 16, the certification by an insurance company that a boiler is "safe and insurable condition" is sufficient to bar inspection by constituted authority. This is a departure from the present law under which official public inspection is required. There are no statutory prohibitions against the creation of "gyp" boiler insurance companies in the District of Columbia and the bill provides no test of the capacity of its inspectors. This would not be so important if the companies were sound and the act required that the boiler be actually insured rather than insurable. On several previous occasions, congressional committees have refused to pass legislation exempting on insurance certificate. If this provision be insisted upon the following amendments should be made:

1. The doing of business in insurance of pressure vessels and boilers should be permitted only after special examination of the qualifications of the company and its staff.

2. The act should provide that the boiler and smoke inspector receive notice prior to any inspection by an insurance company so that he might participate in the examination.

3. Inspectors of insurance companies should be licensed after examination.

4. Exemption on insurance inspection should be effective only during the period that adequate insurance is in force and the liability of the company should be continued until it notifies the boiler and smoke inspector to the contrary.

8. Section 21 empowers the Commissioners to make regulations but the field is so specifically covered by definitions and provisions of the act that no effective leeway is left for the Commissioners.

CONCLUSION

While it is most important that smoke regulatory legislation should be passed during this session, it is likewise most important that it be of the maximum usefulness. The inclusion of the boiler-inspection act is not essential to the adoption of a smoke regulatory legislation but its inspectional provisions are undoubtedly conducive to enforcement. The two acts are fundamentally opposed in legislation philosophy. H. R. 6232 does not undertake the dictation of the style of operation or fuel and requires no elaborate registration of certificates. On the contrary, it punishes the condemnation of the atmosphere unreasonably under more stringent regulations by the Commissioners and controls the use of this apparatus. Full provision for an educational campaign and for supervision in the selected department is available with the appropriations authorized by the Budget Bureau under either bill. However, it is doubtful that the amount specified could possibly provide enough force to carry out the terms of H. R. 7204.

Respectfully submitted,

WILLIAM A. ROBERTS,
People's Counsel, District of Columbia,

COMMISSIONERS OF THE DISTRICT OF COLUMBIA,
Washington, April 23, 1935.

In re H. R. 6232 and H. R. 7204, bills to regulate smoke, and to provide boiler inspection

Mrs. VIRGINIA E. JENCKES,

Chairman Subcommittee on Public Health.

House of Representatives, Washington, D. C.

MADAM: In accordance with permission granted by your subcommittee, we respectfully present the following with reference to the above-named bills:

It seems to be the opinion of the subcommittee that smoke control and boiler inspection should be treated in separate bills rather than in one bill as was proposed in H. R. 7204. To this suggestion we have no objection whatever. We have therefore separated the two, and herewith submit two drafts, one dealing with each subject.

SMOKE CONTROL

The present law in regard to smoke in the District of Columbia was enacted in 1899, and appears as chapter 5, title 19, of the Code of the District (p. 183). The difficulties with that law are (1) it prohibits all emission of smoke, providing no tolerances for momentary periods of stoking; (2) it excepts residences and locomotives; (3) it provides no personnel, but permits the Commissioners to "detail" an inspector from the Health Department to enforce the law; (4) it treats the subject as a health rather than as an engineering problem.

In contemplating amendments to meet these difficulties the Commissioners considered the provisions of a proposed standard smoke ordinance, prepared by the United States Bureau of Mines, under the direction of Dr. Hood. It seemed advisable that if new legislation is to be had on this subject, it is proper to follow the recognized authorities, and to adopt the salient features of the standard ordinance. This was done in H. R. 7204, and in the separate draft on smoke control, here attached. A copy of the Bureau of Mines proposed ordinance has already been filed with your subcommittee. Many of the leading cities have followed this model: Boston, Baltimore, Pittsburgh, Chicago, Hudson County, N. J., and St. Louis, are examples:

The salient features of the bill are (1) adequate personnel in a separate division, in the engineering department; (2) an advisory board of private citizens, which also acts as a board of appeals (paid only a per diem for the latter service); (3) requirement for a permit to be obtained for building or repairing furnaces, thus attacking the problem from the correct viewpoint, which is the proper construction and proper operation of the furnace itself; (4) application of the law to all stacks capable of emitting smoke, including residences and locomotives; (5) a definite standard of permissible smoke, i. e., no. 3 on the Ringleman chart; and (6) a provision for tolerances to be scheduled and promulgated by the Commissioners.

These seem to us to be the proper and essential requirements for adequate smoke control.

BOILER INSPECTION

The present boiler-inspection law in the District of Columbia was enacted in 1873 and amended in 1878 (secs. 64-68 of title 20 of the Code, p. 196). It provides for one inspector who is to inspect every boiler once a year. His compensation is a fee of \$5 for each inspection, paid by the owner. This is the last remaining fee office in the District. The obvious inadequacy of this law, under present conditions, hardly requires demonstration.

The draft hereto attached brings the boiler-inspection law up to date, provides adequate personnel, sets up definite standards of operation, and complete administrative procedure.

The provision, to which some attention was directed at the hearing before your subcommittee, which permits inspection by an insurance company to take the place of inspection by a District official, is inserted for two reasons: (1) Economy and (2) 21 of the 24 States which have adopted the uniform boiler law under the code of the American Society of Mechanical Engineers have adopted this provision. To guard against abuse of the provision, we have inserted a requirement that the Commissioners approve the inspection service offered by any insurance company in this connection.

The possibility that this enactment might affect the law regarding steam engineers in this work is provided against by a specific exception in section 15.

Respectfully submitted.

M. C. HAZEN,

President Board of Commissioners, District of Columbia.

A BILL To control and regulate the discharge or emission of smoke, soot, noxious gases, cinders, or fly ash into open air in the District of Columbia

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Smoke Control Act of the District of Columbia."

SEC. 2. Wherever the word "person" is used in this Act it shall include individuals, firms, partnerships, associations, corporations. Wherever the word "stack" is used it shall mean any chimney, smokestack, structure, or opening of any kind whatsoever capable of emitting smoke. Smokestacks on locomotive roundhouses shall be deemed part of locomotives beneath them.

SEC. 3. There is hereby constituted a division of smoke regulation in the engineer department of the District of Columbia, to be composed of the following: (a) A smoke-control inspector, who shall be an engineer qualified by training and experience in the theory and practice of the construction and operation of fuel-burning furnaces, and in the theory and practice of smoke regulation and prevention, and who, under the supervision of the Commissioners of the District of Columbia, shall have charge of the enforcement of the provisions of this Act and of the regulations promulgated hereunder; (b) such assistants as may be necessary, qualified by training and experience in the theory and practice of combustion engineering and smoke regulation, or in the construction and operation of fuel-burning furnaces and the regulation of smoke from the same; (c) and such other employees as may be necessary for the proper performance of the work. All such officials and employees shall be appointed by the Commissioners of the District of Columbia and their compensation shall be fixed in accordance with the Classification Act of 1923, as amended.

SEC. 4. There is hereby constituted an advisory board, which shall consist of five members to be appointed by the Commissioners of the District of Columbia for terms of 3 years each, which board shall act as advisors to the smoke-control inspector on engineering policies and regulations. The members of said board shall be citizens of the United States and residents of the District of Columbia for a period of not less than 3 years immediately prior to their appointment, and shall be engineers of recognized ability, integrity, and capacity for associated service in municipal work and who have no financial interest in the manufacture or sale of any combustion- or smoke-abatement device, or any fuel. At least two members of said board shall be mechanical engineers with broad experience in the design and operation of heating and fuel-burning installations. When acting as such advisors, members of the board shall serve without compensation. Three members of such board shall constitute a quorum for the transaction of business. Vacancies on said board shall be filled by appointment by the Commissioners of the District of Columbia.

SEC. 5. The advisory board shall act as a board of appeals to hear and determine appeals from decisions of the smoke-control inspector, in respect to permits provided by section 7 of this Act. When acting as such board of appeals each member shall receive compensation of \$5 for each day or part thereof so serving, but no member shall receive a sum in excess of \$250 per annum.

SEC. 6. The production or emission of smoke, fly ash, or fumes, the shade of which is equal to or greater than number 3 of the Ringleman Smoke Chart, or which is so dense as to prevent seeing through it at the point of emission into the external air, from any stack, or open fire in the District of Columbia, except for such periods of time as may be determined by the Commissioners of the District of Columbia, is hereby prohibited.

SEC. 7. No person shall construct, install, reconstruct, alter, or repair any furnace, boiler furnace, stack, or other apparatus connected with stack, unless said person shall have obtained a permit from the smoke-control inspector: *Provided, however,* That repairs which do not increase the capacity of such furnace or do not involve any alteration in or addition to such furnace, boiler furnace, stack, or other apparatus connected with stack, and which do not involve any alteration in the method of smoke prevention, may be made without a permit.

SEC. 8. No person shall use or cause to be used any new, remodeled, or reconstructed furnace, boiler furnace, stack, or other apparatus connected with stack, unless said person shall have a certificate of inspection obtained from the smoke-control inspector, showing that the construction or reconstruction is in compliance with the provisions of this Act and the regulations promulgated hereunder.

SEC. 9. The smoke-control inspector, or one of his inspectors, shall inspect all furnaces, boiler furnaces, stacks, and apparatus for which applications are made for certificates as required by section 8 of this Act, and, if such be found to be in compliance with the requirements of this Act and the regulations promulgated hereunder, shall issue such certificate.

SEC. 10. The issuance by the smoke-control inspector of any permit for the construction, installation, reconstruction, alteration, or repair of any furnace, boiler furnace, stack, or other apparatus connected with stack, shall not be held or construed to exempt any person to whom such permit may have been issued from prosecution for violation of provisions of this Act relating to the emission of smoke in excess of that permitted.

SEC. 11. There shall be paid to the Collector of Taxes of the District of Columbia for the examination of an application for a permit or for the issuance of a permit or a certificate as required by this Act, fees to be fixed from time to time by the Commissioners of the District of Columbia, for each unit of fuel-burning apparatus, commensurate with the cost of examination or inspection.

SEC. 12. In the event that a permit, provided in section 7 of this Act, is denied by the smoke-control inspector, the applicant shall have the right to appeal to the advisory board, and such appeal shall be accompanied by a certified check payable to, or receipt of deposit with, the Collector of Taxes of the District of Columbia in the amount of \$25 to guarantee the payment of the fees of the advisory board. If the decision of the inspector be reversed by the advisory board, such deposit shall be returned to the depositor thereof; if it be affirmed such deposit shall be treated as payment to the District of Columbia of the costs of the appeal. The decisions of the Advisory Board upon such appeals shall be final.

SEC. 13. The smoke-control inspector and his assistants shall have the right to enter, in the performance of his or their duties, at all reasonable hours, all premises from which smoke is being emitted or has been emitted, and it shall be unlawful for any person to deny admittance to said inspector or his assistants or to interfere with him or them in the performance of his or their duties.

SEC. 14. The smoke-control inspector shall keep in the office of the Division of Smoke Regulation all applications made, and a complete record thereof, as well as of all permits and certificates issued. He shall also keep a complete record of all smoke observations on stacks, and such other records and data pertaining to the Division of Smoke Regulation as may be directed by the Commissioners of the District of Columbia.

SEC. 15. The use of any furnace, boiler furnace, stack, or other apparatus connected with stack, hereafter constructed, installed, reconstructed, or altered, in violation of any of the prohibitions or requirements of this Act or of the regulations promulgated under the authority hereof, shall constitute a common nuisance and the Corporation Counsel of the District of Columbia may maintain an action in the Supreme Court of the District of Columbia, in the name of the District of Columbia, to abate and perpetually enjoin such nuisance.

SEC. 16. If any person shall violate any one or more of the provisions of this Act, or of regulations duly promulgated hereunder, the Corporation Counsel of the District of Columbia, or any of his assistants, shall file an information in the police court in the name of the District of Columbia, and upon conviction such person shall be subject to a fine not to exceed \$100 or to imprisonment for not more than ninety days, or both, for each and every violation thereof and each violation shall constitute a separate offense.

SEC. 17. The Commissioners of the District of Columbia are hereby authorized and empowered to make such regulations as they may deem proper to carry out the provisions of this Act, and to fix the fees herein provided.

SEC. 18. All laws or parts of laws relating to smoke prevention or regulation in conflict with the provisions of this Act are hereby repealed.

SEC. 19. If any provision of this Act or the application thereof to any person or circumstances is held invalid, such invalidity shall not affect other provisions or applications of the Act which can be given effect without the invalid provision or application, and to this end the provisions of this Act are declared to be severable.

SEC. 20. This Act shall become effective six months from the date of its approval. The regulations and schedule of fees herein provided for shall be promulgated by the Commissioners of the District of Columbia and printed in one or more of the daily newspapers published in the said District but

shall not be enforced until thirty days after such publication or until the effective date of this Act. Amendments to the regulations or new or additional schedules of fees, when and as the same may be adopted, shall likewise be printed in one or more of the daily newspapers published in the said District and no penalty for violation thereof or payment of new or additional fees prescribed shall be enforced until thirty days after such publication.

BOILER INSPECTION ACT OF THE DISTRICT OF COLUMBIA

A BILL To provide for the inspection, control, and regulation of steam boilers and unfired pressure vessels in the District of Columbia

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled. That this Act may be cited as the "Boiler Inspection Act of the District of Columbia."

SEC. 2. Wherever the word "person" is used in this Act it shall include individuals, firms, partnerships, associations, and corporations.

SEC. 3. There is hereby constituted a boiler inspection service in the Engineer Department of the District of Columbia, to be composed of the following: (a) A boiler inspector who shall be qualified by training and experience in the construction and operation of steam boilers and unfired pressure vessels, and who, under an official designated by the Commissioners of the District of Columbia, shall have charge of the enforcement of the provisions of this Act and of the regulations promulgated hereunder; (b) such assistant boiler inspectors as may be necessary, qualified by training and experience in the construction and operation of steam boilers and unfired pressure vessels; (c) and such other employees as may be necessary for the proper performance of the work. All such officials and employees shall be appointed by the Commissioners of the District of Columbia and their compensation shall be fixed in accordance with the Classification Act of 1923, as amended.

SEC. 4. No person shall use or cause to be used any steam boiler operating at a pressure in excess of fifteen pounds per square inch; or, operating at a pressure less than fifteen pounds per square inch, unless provided with an unassisted gravity return; or any unfired pressure vessel, operating at a pressure in excess of sixty pounds per square inch and having a capacity in excess of fifteen gallons, except such unfired vessels as may be exempted by the Commissioners of the District of Columbia, without having first obtained a certificate of inspection from the boiler inspector.

SEC. 5. No person shall operate or cause to be operated any boiler or unfired pressure vessel, referred to in section 4 hereof, at a pressure greater than that permitted by the certificate of inspection, or while feed pumps, gages, cocks, valves, or automatic safety-control devices are not in proper working condition, or in violation of any of the regulations promulgated hereunder by the Commissioners of the District of Columbia.

SEC. 6. The boiler inspector, or one of his assistants, shall inspect annually all boilers and unfired pressure vessels for which a certificate of inspection is required by section 4 of this Act, and shall determine by actual tests the condition thereof from the standpoint of safety and fitness for operation. If such boiler or vessel be safe and fit for operation, the boiler inspector shall issue the certificate of inspection which shall state, among other things, the pressure per square inch such boiler or vessel may be allowed to carry. This certificate of inspection shall be displayed in a conspicuous place in close proximity to the boiler or vessel covered thereby. In the case of a steam boiler or unfired pressure vessel which is regularly inspected at least once a year by an insurance company duly licensed in the District of Columbia and approved by the Commissioners of the said District as to its inspection service, where a report of such inspection filed within thirty days after such inspection with the boiler inspector shows any such boiler or unfired pressure vessel to be in a safe and insurable condition, such inspection and report may take the place of the inspection hereinbefore provided, and the certificate of inspection may be issued upon such report.

SEC. 7. The boiler inspector may in his discretion revoke or suspend the certificate of inspection provided in section 4 of this Act, if at any time he shall find any boiler or unfired pressure vessel covered by such certificate to be unsafe or unfit for operation.

SEC. 8. Steam boilers and unfired pressure vessels located in or upon self-propelled boats or vessels or boats or vessels owned or operated by the United States, or upon locomotives, street cars, busses, or other vehicles operated under

the regulations of any Federal agency or the Public Utilities Commission of the District of Columbia, shall be exempt from the provisions of this Act.

SEC. 9. There shall be paid to the Collector of Taxes of the District of Columbia for the issuance of a certificate as required by this Act, fees to be fixed from time to time by the Commissioners of the District of Columbia, for the annual inspection of each steam boiler or unfired pressure vessel, commensurate with the cost of inspection, with power to fix higher fees for the issuance of a certificate where the inspection in connection therewith is made on a Sunday or legal holiday. When an inspection report is filed by an insurance company with the said boiler inspector, showing that a boiler or unfired pressure vessel has been inspected and found to be in a safe and insurable condition, as provided in section 6, there shall be paid to the Collector of Taxes of the District of Columbia a fee of \$1 prior to the issuance of a certificate of inspection.

SEC. 10. The boiler inspector and his assistants shall have the right to enter, in the performance of his or their duties, at all reasonable hours, all premises on which a steam boiler or unfired-pressure vessel is being installed, operated, or maintained, and it shall be unlawful for any person to deny admittance to any such inspector or assistant or to interfere with him or them in the performance of his or their duties.

SEC. 11. The boiler inspector shall keep in the office of the Boiler Inspection Service all applications made, and a complete record thereof, as well as of all certificates issued. He shall also keep a complete record of each boiler and unfired-pressure vessel inspected, and such other records and data pertaining to the Boiler Inspection Service as may be directed by the Commissioners of the District of Columbia.

SEC. 12. The use of any steam boiler or unfired-pressure vessel in violation of any of the prohibitions or requirements of this Act or of the regulations promulgated under the authority hereof, shall constitute a common nuisance and the Corporation Counsel of the District of Columbia may maintain an action in the Supreme Court of the District of Columbia, in the name of the District of Columbia, to abate and perpetually enjoin such nuisance.

SEC. 13. If any person shall violate any one or more of the provisions of this Act, or of regulations duly promulgated hereunder, the Corporation Counsel of the District of Columbia, or any of his assistants, shall file an information in the police court in the name of the District of Columbia, and upon conviction such person shall be subject to a fine not to exceed \$100 or to imprisonment for not more than ninety days, or both, for each and every violation thereof and each violation shall constitute a separate offense.

SEC. 14. The Commissioners of the District of Columbia are hereby authorized and empowered to make such regulations as they may deem proper to carry out the provisions of this Act, and to fix the fees herein provided.

SEC. 15. All laws or parts of laws relating to boiler inspection in conflict with the provisions of this Act are hereby repealed; provided that no provision hereof shall be deemed to amend, alter, or repeal the Act approved February 28, 1887, as amended, being an Act to regulate steam engineering in the District of Columbia.

SEC. 16. If any provision of this Act or the application thereof to any person or circumstances is held invalid, such invalidity shall not affect other provisions or applications of the Act which can be given effect without the invalid provision or application, and to this end the provisions of this Act are declared to be severable.

SEC. 17. This Act shall become effective six months from the date of its approval. The regulations and schedule of fees herein provided for shall be promulgated by the Commissioners of the District of Columbia and printed in one or more of the daily newspapers published in the said District but shall not be enforced until thirty days after such publication or until the effective date of this Act. Amendments to the regulations or new or additional schedules of fees, when and as the same may be adopted, shall likewise be printed in one or more of the daily newspapers published in the said District and no penalty for violation thereof or payment of new or additional fees prescribed shall be enforced until thirty days after such publication.

(Thereupon, at 2:15 p. m., the subcommittee adjourned.)

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